MOHAMED BIN ZAYED
UNIVERSITY OF
ARTIFICIAL INTELLIGENCE

Faculty Portfolio 2022

mbzuai.ac.ae

CONTENTS

Published by:

Mohamed bin Zayed University of Artificial Intelligence (MBZUAI)

Masdar City
Abu Dhabi
United Arab Emirates

mbzuai.ac.ae

Published July, 2022

THE WORLD'S FIRST GRADUATE AI RESEARCH UNIVERSITY

Mohamed bin Zayed University of Artificial Intelligence (MBZUAI) is a graduate research university focused on artificial intelligence (AI), computer science, and digital technologies across industrial sectors.

MBZUAI aims to empower students, businesses and governments to advance AI as a global force for positive progress. The university offers an array of graduate programs designed for the pursuit of advanced, specialized knowledge and skills in AI including computer vision, machine learning, and natural language processing.

Our vision is to drive excellence in research, innovation, and the use of AI to foster economic growth, while positioning Abu Dhabi as a hub for the international AI community.

A MESSAGE FROM OUR PRESIDENT

AI has emerged as a novel and disruptive technology promising to transform traditional industries and create new ones along the way. It is enabling new capabilities, redefining business models and public policy, and lifting scientific discovery to new heights. AI is the transformative technology of our era. Like the steam engine, electricity and semiconductors before it, AI is reshaping people's lives and the societies in which we live.

MBZUAI is in an ideal position to lead the region, and the world, in AI research, teaching, and innovation. As the world's first university dedicated to AI education, research and innovation, it is our mission to empower brilliant minds in AI—to develop the talent, and the technologies, of the future. This all centers around our world-class faculty.

The women and men we have recruited to found this university, and to lead research and innovation for the coming decades, are leaders in this burgeoning field of AI. Their education and experiences in academia and industry make them powerful mentors, role models, entrepreneurs and coauthors for the talent we are developing in our master's and doctoral programs, in our executive educational offerings, and in our startup environment.

Our advanced curriculum is aligned with technologies that have the potential to solve some of the biggest challenges facing business and society today. As a university, we are a key initiative under the UAE's national AI strategy, which is poised to play a pivotal role in supporting the nation's efforts to build and sustain an AI-based knowledge economy, while enabling local innovation clusters and AI startups.

At MBZUAI, we want you to receive the best possible training from the best faculty in AI. We want to help you become leaders that will change the world. We encourage you to challenge existing paradigms, to think creatively and independently, and to overcome limits.

MBZUAI President,
Professor Eric Xing

WORLD-CLASS EDUCATORS

Working collaboratively with students, postdocs, and researchers, MBZUAI faculty encourage aiming higher and looking deeper in pursuit of research excellence and innovation. Through coursework, research, entrepreneurial activities, and social interaction, faculty, and students both learn from and challenge each other in a nurturing and challenging university environment.

MBZUAI students have immediate access to some of the world's brightest minds in AI. Faculty come from all over the world, with an academic heritage that threads through the preeminent institutions of global higher education.

MBZUAI faculty are fellows of top scientific societies; they are editors in some of the most prestigious journals; and they have worked in some of the top public and private sector institutions leading the way in AI research and implementation.

STRATEGIC OBJECTIVES

BUILD A KNOWLEDGE ECONOMY

Support Abu Dhabi's efforts to build and sustain an AI-based, knowledge economy

SUPPORT AI IMPLEMENTATION

Ensure that industry and public institutions have the people, the skills, and the resources, to be best-in-class in AI implementation

DEVELOP GLOBAL AI TALENT

Attract and develop the best regional and global talent focused on AI

STRIVE FOR RESEARCH EXCELLENCE

Strive for AI research excellence through coursework, mentorship, and collaboration with top global institutions

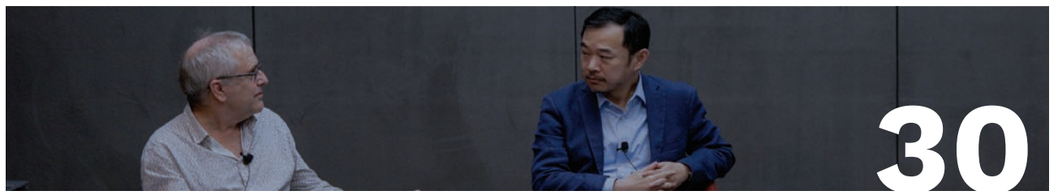
BECOME AN AI THINK TANK

Become the trusted advisor for industry and public institutions

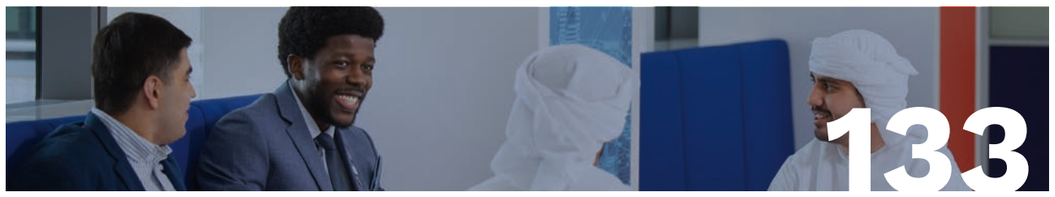
MBZUAI
BY THE NUMBERS

34 AI faculty in computer vision, machine learning and natural language processing

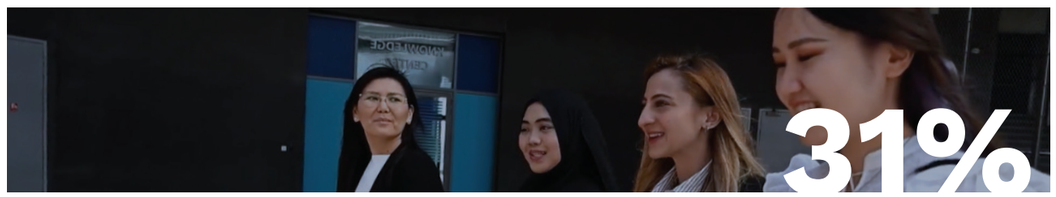
30 globally ranked in AI, CV, ML and NLP



133 students from more than 35 nations



31% of students are **women**



4:1 student-to-faculty ratio

Eric Xing

President
Professor of Computer Science
and Machine Learning

Research

Xing's main research interests are the development of machine learning and statistical methodology, and large-scale computational systems and architectures, for solving problems involving automated learning, reasoning, and decision-making in high-dimensional, multimodal, and dynamic possible worlds in artificial, biological, and social systems.

Education

- **Ph.D. in molecular biology and biochemistry** from Rutgers University, USA
- **Ph.D. in computer science** from the University of California, USA

Publishing

Xing has authored or contributed to more than 400 cited research papers and reports. His research has been cited more than 44,000 times by leading academics and academic journals.

Distance metric learning with application to clustering with side-information. E Xing, M Jordan, SJ Russell, A Ng. Advances in neural information processing systems 15, 2002.

Mixed membership stochastic blockmodels. EM Airoldi, D Blei, S Fienberg, E Xing. Advances in neural information processing systems 21, 2008.

Object bank: A high-level image representation for scene classification & semantic feature sparsification. LJ Li, H Su, L Fei-Fei, E Xing. Advances in neural information processing systems 23, 2010.

Theoretically principled trade-off between robustness and accuracy. H Zhang, Y Yu, J Jiao, E Xing, L El Ghaoui, M Jordan. International conference on machine learning, 7472-7482, 2019.

Feature selection for high-dimensional genomic microarray data. EP Xing, MI Jordan, RM Karp. Icml 1, 601-608, 2001.

Toward controlled generation of text. Z Hu, Z Yang, X Liang, R Salakhutdinov, EP Xing. International conference on machine learning, 1587-1596, 2017.

Career

Prior to joining MBZUAI, Xing was a professor of computer science at Carnegie Mellon University where he was the founding director of the Center for Machine Learning and Health. Xing has also served as visiting associate professor at Stanford University, and visiting research professor at Facebook Inc.

He is also the founder, chairman, and chief scientist of Petuum Inc., which was recognized as a 2018 World Economic Forum Technology Pioneer that builds standardized artificial intelligence development platforms and operating systems for broad and general industrial AI applications.

Xing is a recipient of the National Science Foundation (NSF) Career Award, the Alfred P. Sloan Research Fellowship in Computer Science, the United States Air Force Office of Scientific Research Young Investigator Award, and the IBM Open Collaborative Research Faculty Award.

He is a board member of the International Machine Learning Society. He is a fellow of the Association of Advancement of Artificial Intelligence (AAAI), and an Institute of Electrical and Electronics Engineers (IEEE) fellow. In 2022, Xing was elected a fellow of the American Statistical Association (ASA). In the past, he served as the program chair (2014) and general chair (2019) of the International Conference of Machine Learning (ICML).

Fakhri Karray

Provost
Professor of Machine Learning

Research

Karray's research interests are in the areas of operational AI, cognitive machines, natural human-machine interaction, autonomous and intelligent systems. Applications of his research include virtual care systems, cognitive and self-aware machines/robots/vehicles, predictive analytics in supply chain management and intelligent transportation systems.

Education

- **Ph.D. in systems and control** from the University of Illinois Urbana-Champaign, USA
- **Ing. Dip, Electrical Eng** from the University of Tunis, Tunisia

Publishing

Karray has published extensively in the general field of pattern analysis and machine intelligence and is the author of 20 US registered patents.

Soft Computing and Intelligent Systems Design (Addison Wesley Publishing, 2004).

Elements of Dimensionality Reduction and Manifold Learning (Springer, Publication date: 2022).

G Muhammad, F Alshehri, F Karray, A El Saddik, M Al Sulaiman, TH Falk, "A comprehensive Survey on Multimodal Medical Signals Fusion for Smart Healthcare Systems," Information Fusion, 76, pp. 355-375, 2021.

C Ou and F Karray, "Enhancing Driver Distraction Recognition Using Generative Adversarial Networks," IEEE Transactions on Intelligent Vehicles (3), 385-396, 2019

Career

Before joining MBZUAI, Karray served as the founding co-director of the University of Waterloo AI Institute. He has held the Loblaws Research Chair in Artificial Intelligence in the department of electrical and computer engineering at the University of Waterloo, Canada.

Karray was honored in 2021 by the IEEE Vehicular Technology Society (VTS) for his novel work on improving traffic flow prediction using weather Information in connected cars through deep learning and tools of AI.

Fakhri is the co-founder and Chief Scientist of Yourika.ai, a provider of AI-based online learning systems. He is a Fellow of IEEE, a Fellow of the Canadian Academy of Engineering, and a Fellow of the Engineering Institute of Canada.

Timothy Baldwin

Associate Provost
for Academic and Student Affairs
Acting Chair
of the Natural Language Processing Department
Professor
of Natural Language Processing

Research

Baldwin's primary research focus is on natural language processing (NLP), including deep learning, algorithmic fairness, computational social science, and social media analytics.

Education

- **Ph.D. in computer science** from the Tokyo Institute of Technology, Japan
- **Master of Engineering in computer science** from the Tokyo Institute of Technology, Japan
- **Bachelor of Science in computer science and mathematics** from the University of Melbourne, Australia
- **Bachelor of Arts** (Linguistics/Japanese) from the University of Melbourne, Australia

Publishing

Baldwin is the author of more than 400 peer-reviewed publications across diverse topics in natural language processing and AI.

Subramanian, Shivashankar, Afshin Rahimi, Timothy Baldwin, Trevor Cohn and Lea Frermann (2021) Fairness-aware Class Imbalanced Learning, In Proceedings of the 2021 Conference on Empirical Methods in Natural Language Processing (EMNLP 2021), Online and Punta Cana, Dominican Republic, pp. 2045—2051.

Subramanian, Shivashankar, Afshin Rahimi, Timothy Baldwin, Trevor Cohn and Lea Frermann (2021) Fairness-aware Class Imbalanced Learning, In Proceedings of the 2021 Conference on Empirical Methods in Natural Language Processing (EMNLP 2021), Online and Punta Cana, Dominican Republic, pp. 2045—2051.

Aji, Alham Fikri, Genta Indra Winata, Fajri Koto, Samuel Cahyawijaya, Ade Romadhony, Rahmad Mahendra, Kemal Kurniawan, David Moeljadi, Radityo Eko Prasojo, Timothy Baldwin, Jey Han Lau, Sebastian Ruder (to appear) One Country, 700+ Languages: NLP Challenges for Underrepresented Languages and Dialects in Indonesia, In Proceedings of the 60th Annual Meeting of the Association for Computational Linguistics (ACL 2022).

Han, Xudong, Timothy Baldwin and Trevor Cohn (2021) Diverse Adversaries for Mitigating Bias in Training, In Proceedings of the 16th Conference of the European Chapter of the Association for Computational Linguistics (EACL 2021), virtual, pp. 2760—2765.

Bhatia, Shraey, Jey Han Lau and Timothy Baldwin (2021) Automatic Classification of Neutralization Techniques in the Narrative of Climate Change Scepticism, In Proceedings of the 2021 Conference of the North American Chapter of the Association for Computational Linguistics – Human Language Technologies (NAACL HLT 2021), virtual.

Koto, Fajri, Jey Han Lau and Timothy Baldwin (2021) Top-down Discourse Parsing via Sequence Labelling, In Proceedings of the 16th Conference of the European Chapter of the Association for Computational Linguistics (EACL 2021), virtual, pp. 715-726.

Career

Prior to joining MBZUAI, Baldwin spent 17 years at the University of Melbourne, including roles as Melbourne Laureate Professor, Director of the ARC Training Centre in Cognitive Computing for Medical Technologies (in partnership with IBM), Associate Dean Research Training in the Melbourne School of Engineering, and Deputy Head of the Department of Computing and Information Systems.

He has previously held visiting positions at Cambridge University, University of Washington, University of Tokyo, Saarland University, NTT Communication Science Laboratories, and National Institute of Informatics.

Prior to joining the University of Melbourne in 2004, he was a senior research engineer at the Center for the Study of Language and Information, Stanford University (2001-2004).

Baldwin is president of the Association for Computational Linguistics (ACL 2022).

Sir Michael Brady

Adjunct Distinguished Professor

Research

Brady's research focus is in real-world medical image analysis solutions which he successfully commercialized for industry on several occasions. His current work is predominantly focused on: quantitative MRI of the liver, pancreas, and breast; mammography and tomosynthesis; assessment of trabecular structures for early evidence of osteoporosis; and the application of Bayesian Networks for causal reasoning about multi-organ conditions, particularly type-2 diabetes.

Education

- **Ph.D. in mathematics** from the Australian National University (ANU), Australia
- **Master's in mathematics** from the University of Manchester, United Kingdom
- **Bachelor of Science (1st class honors) in mathematics** from the University of Manchester, United Kingdom

Publishing

Brady is the author of more than 500 articles and 50 patents in computer vision, robotics, medical image analysis, and artificial intelligence, and the author or editor of 10 books.

Tom Waddell, Alexandre Bagur, Diogo Cunha, Helena Thomaides-Brear, Rajarshi Banerjee, Daniel J Cuthbertson, Emily Brown, Kenneth Cusi, Michael Brady, Greater ectopid fat deposition, liver fibroinflammation and lower skeletal muscle mass in people with type 2 diabetes: a UK Biobank analysis, Obesity (accepted for publication)

Daniel Bulte, Matthew Robson, Michael Brady, Alexandre Triay Bagur, Pancreas Ectopic Fat: Imaging-based Quantification, chapter in Visceral and Ectopic Fat: Risk Factors for Type 2 Diabetes, Atherosclerosis, and Cardiovascular Disease, Ed. Hildo J. Lamb, Elsevier 2022

Richard Sidebottom, Sarah Vinnicombe, Michael Brady, Iain Lyburn, Fair shares: building and benefiting from healthcare AI with mutually beneficial structures and development partnerships, Br. J. Radiology, 2021

Faraz Janan and Michael Brady, RICE: A Method for Quantitative Mammographic Image Enhancement, Medical Image Analysis, 2021

James Owler, Alexandre Triay Bagur Scott Marriage, Zobair Arya, Paul Aljabar, John McGonigle, Sir Michael Brady, and Daniel Bulte, Pancreas Volumetry in UK Biobank: Comparison of Models and Inference at Scale, Proc. Annual Conference on Medical Image Understanding and Analysis, 2021

Alexandre Triay Bagur, Paul Aljabar, Zobair Arya, John McGonigle, Sir Michael Brady, and Daniel Bulte, Slice-to-Volume Registration Enables Automated Pancreas MRI Quantification in UK Biobank, Proc. Annual Conference on Medical Image Understanding and Analysis, 2021

Career

Brady was associate director of the AI Laboratory at MIT from 1980 to 1985, leaving to take up the newly created Professorship of Information Engineering, University of Oxford, which he held from 1985 to 2010.

He is the emeritus professor of oncological imaging in the Department of Oncology of the University of Oxford.

Brady has been elected a fellow of the Royal Society, fellow of the Royal Academy of Engineering, membre associé étranger of the Académie des Sciences, and an honorary fellow of the Institution of Engineering and Technology.

Brady is also a fellow of the Institute of Physics, a fellow of the Academy of Medical Sciences, a fellow of the American Association of AI, and a fellow of the British Computer Society.

Brady has founded successful companies, primarily in medical image analysis and was a director of Oxford Instruments plc.

Michael I. Jordan

Laureate Professor
Honorary Program Director,
MBZUAI Laureate Faculty Program

Research

Jordan's research interests bridge the computational, statistical, cognitive, biological and social sciences. Jordan developed recurrent neural networks as a cognitive model, and his work is less driven from a cognitive perspective and more from the background of traditional statistics. Jordan popularized Bayesian networks in the machine learning community and is known for pointing out links between machine learning and statistics. He has also been prominent in the formalization of variational methods for approximate inference and the popularization of the expectation-maximization algorithm in machine learning.

Education

- **Ph.D. in cognitive science** from the University of California, USA
- **Master of Science in mathematics** from Arizona State University, USA
- **Bachelor of Science in psychology** from Louisiana State University, USA

Publishing

Jordan is one of the leading figures in machine learning, and in 2016 Science named him the world's most influential computer scientist.

J. D. Lee, M. Jordan, B. Recht, and M. Simchowitz, "Gradient Descent Only Converges to Minimizers," in Proceedings of the 29th Conference on Learning Theory, {COLT} 2016, New York, USA, June 23-26, 2016, 2016, pp. 1246--1257.

X. Pan, M. Lam, S. Tu, D. Papailiopoulos, C. Zhang, M. Jordan, K. Ramchandran, C. Re, and B. Recht, "Cyclades: Conflict-free Asynchronous Machine Learning," in Advances in Neural Information Processing Systems 29, 2016.

X. Pan, D. Papailiopoulos, S. Omyak, B. Recht, K. Ramchandran, and M. Jordan, "Parallel correlation clustering on big graphs," in Advances in Neural Information Processing Systems 28, 2015, pp. 82--90.

X. Pan, S. Jegelka, J. E. Gonzalez, J. K. Bradley, and M. Jordan, "Parallel Double Greedy Submodular Maximization," in Advances in Neural Information Processing Systems 27, 2014.

X. Pan, J. E. Gonzalez, S. Jegelka, T. Broderick, and M. Jordan, "Optimistic concurrency control for distributed unsupervised learning," in Advances in Neural Information Processing Systems 26, 2013, pp. 1403--1411.

B. Taskar, S. Lacoste Julien, and M. Jordan, "Structured prediction, dual extragradient and Bregman projections," J. Machine Learning Research, vol. 7, pp. 1627-1653, Dec. 2006.

Career

Jordan is the Pehong Chen Distinguished Professor in the Department of Electrical Engineering and Computer Science and the Department of Statistics at the University of California, Berkeley. Jordan has been awarded an honorary doctorate from Yale University. He is the 2020 IEEE John von Neumann Medal winner.

He has been named a Neyman Lecturer and a Medallion Lecturer by the Institute of Mathematical Statistics. Jordan received the IJCAI Research Excellence Award in 2016, the David E. Rumelhart Award in 2015 and the ACM/AAAI Allen Newell Award in 2009.

He is a Fellow of the Association of Advancement of Artificial Intelligence (AAAI), ASA, CSS, IEEE, IMS, Bayesian Analysis (ISBA) and Society for Industrial and Applied Mathematics (SIAM).

Abdulmotaleb El Saddik

Acting Chair,
Computer Vision Department
Professor of Computer Vision

Research

El Saddik's research focus is on the establishment of digital twins to enhance the quality of life of citizens using artificial intelligence (AI), as well as multimedia computing and communications, and extended reality (XR) including haptics/AR/VR.

Education

- **Dr.-Ing. (Ph.D.) Electrical and computer engineering,** Darmstadt University of Technology, Germany
- **Dipl.-Ing. Electrical and computer engineering,** Darmstadt University of Technology, Germany

Publishing

El Saddik has co-authored 10 books and more than 600 publications and six U.S. patents, as well as chaired more than 50 conferences and workshops. El Saddik is the designated editor-in-chief of the ACM Transactions on Multimedia Computing, Communications and Applications (ACM TOMM), senior associate editor of IEEE Multimedia (IEEE MM), and guest editor for several transactions and journals. He has also received seven best paper awards.

Haptics Technologies: Bringing Touch to Multimedia (Springer), Abdulmotaleb El Saddik, Mauricio Orozco, Mohamad Eid, Jongeun Cha, 2011.

Multimodal fusion for multimedia analysis: a survey. PK Atrey, MA Hossain, A El Saddik, MS Kankanhalli Multimedia systems 16 (6), 345-379, 2010.

Digital twins: The convergence of multimedia technologies. A El Saddik, IEEE MultiMedia 25 (2), 87-92, 2018.

C2PS: A digital twin architecture reference model for the cloud-based cyber-physical systems, K. M. Alam and A. El Saddik, in IEEE Access, vol. 5, pp. 2050-2062, 2017, doi: 10.1109/ACCESS.2017.2657006.

Evaluating and improving the depth accuracy of Kinect for Windows v2. L Yang, L Zhang, H Dong, A Alelaiwi, A El Saddik. IEEE Sensors Journal 15 (8), 4275-4285, 2015.

Career

Before joining MBZUAI, El Saddik served as a distinguished university professor and university research chair in the School of Electrical Engineering and Computer Science at the University of Ottawa. He was the director of the Ottawa-Carleton Institute for Electrical and Computer Engineering (OCIECE) and the director of the Medical Devices Innovation Institute (MDII) anddDirector of the Information Technology Cluster, Ontario Research Network on Electronic Commerce (ORNEC).

El Saddik is a fellow of the Royal Society of Canada, and a fellow of IEEE, a fellow of the Canadian Academy of Engineering and a fellow of the Engineering Institute of Canada.

He is an ACM distinguished scientist and has received several awards, including the Friedrich Wilhelm Bessel Award from the German Humboldt Foundation, the IEEE Instrumentation and Measurement Society Technical Achievement Award. During his career, he has supervised more than 150 researchers.

Hao LI

Associate Professor of Computer Vision
Director, MBZUAI Metaverse Lab

Research

Hao's research focuses on novel deep learning and data-driven techniques for data capture and synthesis, advanced geometry processing and multi-modal algorithms, as well as the development of complex end-to-end systems for AR/VR applications and visual effects. He is particularly interested in human digitization (faces, hair, bodies, clothing), performance capture and motion synthesis, neural rendering (GANs, NeRFs, etc.), as well as AI-media synthesis, manipulation, and detection.

Education

- **Ph.D. in computer science** from ETH Zurich, Switzerland
- **Diploma (M.Sc.) in computer science** from Universität Karlsruhe, Germany

Publishing

Li's research involves the development of novel deep learning, data-driven, and geometry processing algorithms. He is known for his seminal work in avatar creation, facial animation, hair digitization, dynamic shape processing, as well as his recent efforts in AI media synthesis and deepfake detection.

Normalized avatar synthesis using stylegan and perceptual refinement. Huiwen Luo, Liwen Hu, Koki Nagano, Zejian Wang, Han-Wei Kung, Qingguo Xu, Lingyu Wei, Hao Li. Proceedings of the 34th IEEE International Conference on Computer Vision and Pattern 2021, 06/2021 – CVPR 2021

Monocular real-time volumetric performance capture. Ruilong Li, Yuliang Xiu, Shunsuke Saito, Zeng Huang, Kyle Olszewski, Hao Li. Proceedings of the 16th European Conference on Computer Vision 2020, 08/2020 – ECCV 2020

Learning to infer implicit surfaces without 3D supervision. Shichen Liu, Shunsuke Saito, Weikai Chen, Hao Li. Proceedings of the 33rd Conference on Neural Information Processing Systems 2019, 12/2019 – NeurIPS 2019

Softrasterizer: differentiable rendering for image-based 3D reasoning. Shichen Liu, Tianye Li, Weikai Chen, Hao Li. Proceedings of the IEEE International Conference on Computer Vision 2019, 10/2019 – ICCV 2019 (Oral Presentation)

PIFU: Pixel-aligned function for high-resolution clothed human digitization. Shunsuke Saito, Zeng Huang, Ryota Natsume, Shigeo Morishima, Angjoo Kanazawa, Hao Li. Proceedings of the IEEE International Conference on Computer Vision 2019, 10/2019 – ICCV 2019

Virtual human creator. Lingyu Wei, McLean Goldwhite, Zejian Wang, Huiwen Luo, Liwen Hu, Andy Spielberg, Brandon White, Katherine Lee, Aviral Agarwal, Anda Deng, Yen-Chun Chen, Jack Howard, Yuki Ikegami, Yudai Tamamura, Philip Scott, Kazuma Takahashi, Hao Li. SXSW 2022 Creative Industries Expo, Austin, 03/2022 – SXSW 2022 Lessons learned from large-scale, first-tier clinical exome sequencing in a highly consanguineous population. D Monies, M Abouelhoda, M Assoum, N Moghrabi, R Rafiullah, et al. The American Journal of Human Genetics 104 (6), 1182-1201, 2019.

Career

Hao Li is CEO and co-founder of Pinscreen, a startup that builds cutting edge AI-driven virtual avatar technologies. He was previously a Distinguished Fellow of the Computer Vision Group at UC Berkeley and Associate Professor of Computer Science at the University of Southern California, where he was also director of the USC Institute for Creative Technologies.

Li works at the intersection between computer vision, computer graphics, and machine learning, with focus on virtual humans, reality capture, and AI synthesis. His goal is to enable new AI and immersive technologies that can make the concept of the metaverse possible, and enhance our lives with digital experiences that are otherwise not possible in the physical world.

Hao was also a visiting professor at Weta Digital, a research lead at Industrial Light & Magic / Lucasfilm, and a postdoctoral fellow at Columbia and Princeton universities. Hao was speaker at the World Economic Forum in Davos in 2020 and exhibited at SXSW in 2022. His startup, Pinscreen, was recipient of the Epic Megagrants in 2021, and in 2022, Hao was featured in the first season of Amazon's documentary re:MARS Luminaries.

Fahad Khan

Associate Professor
of Computer Vision

Research

Khan's research interests include a wide range of topics within computer vision, including object recognition, detection, segmentation, tracking and action recognition. Dr. Khan's current research particularly focuses on learning visual recognition models with limited human supervision.

Education

- **Ph.D. in computer vision** from the Autonomous University of Barcelona, Spain
- **Master's in intelligent systems design** from Chalmers University of Technology, Sweden
- **Master's in artificial intelligence and computer vision** from the Autonomous University of Barcelona, Spain

Publishing

Khan has published more than 100 reviewed conference papers, journal articles, and book contributions, with more than 20,000 citations according to Google Scholar.

A. Gupta, S. Narayan, K. J. Joseph, S. Khan, FS. Khan, M. Shah. OW-DETR: Open-world Detection Transformer. CVPR 2022.

N. Ristea, R. Ionescu, K. Nasrollahi, FS. Khan, T. Moeslund, M. Shah. Self-Supervised Predictive Convolutional Attentive Block for Anomaly Detection. CVPR 2022.

K. J. Joseph, S. Khan, FS Khan, V. Balasubramanian. Towards Open World Object Detection. CVPR 2021.

M. Danelljan, G. Bhat, FS. Khan, M. Felsberg. ATOM: Accurate Tracking by Overlap Maximization. CVPR 2019.

A. Acsintoae, A. Florescu, M. Georgescu, T. Mare, P. Sumedrea, R. Ionescu, FS Khan, M. Shah: UBnormal: New Benchmark for Supervised Open-Set Video Anomaly Detection. CVPR 2022.

T. Wang, T. Yang, M. Danelljan, FS. Khan, X. Zhang, J. Sun. Learning Human-Object Interaction Detection Using Interaction Points. CVPR 2020.

Career

From 2012 to 2014, Khan was a postdoctoral fellow and then a research fellow (2014-2018) at Computer Vision Laboratory, Linköping University, Sweden.

In 2018, he was awarded the Docent title in computer vision from Linköping University, Sweden. Prior to joining MBZUAI, Khan was a lead scientist at the Inception Institute of Artificial Intelligence (IIAI), Abu Dhabi, United Arab Emirates.

Khan has achieved top ranks on various international challenges (Visual Object Tracking VOT: 1st 2014 and 2018, 2nd 2015, 1st 2016; VOT-TIR: 1st 2015 and 2016; OpenCV Tracking: 1st 2015; 1st PASCAL VOC Segmentation and Action Recognition tasks 2010). He received the best paper award in the computer vision track at IEEE ICPR 2016.

Salman Khan

Associate Professor
of Computer Vision

Research

Khan's research interests include computer vision and machine learning. He has been actively working on learning from limited data (zero and few-shot learning), adversarial robustness of deep neural networks and continual life-long learning systems for computer vision problems. The above-mentioned tasks can help us realize intelligent autonomous systems that can better understand the real-world for improved recognition, detection, segmentation, and detailed scene comprehension.

Education

- **Ph.D. in computer science** from the University of Western Australia, Australia (Honorable mention on Dean's list)

Publishing

Khan has published more than 80 papers in top scientific journals and conferences such as TPAMI, IJCV, CVPR, ICCV, ECCV, ICLR, NeurIPS, IJCAI, IROS and AAAI.

M. Naseer, K. Ranasinghe, S. H. Khan, M. Hayat, F. S. Khan, and M-H. Yang, "Intriguing Properties of Vision Transformers," Advances in Neural Information Processing Systems, (NeurIPS), 2021. [Oral]

KJ Joseph, J. Rajasegaran, S. H. Khan, F. S. Khan, and V. Balasubramanian "Incremental Object Detection via Meta-learning," IEEE Transactions on Pattern Analysis and Machine Intelligence, (TPAMI), IEEE, 2021.

S. Ramasinghe, K. Ranasinghe, S. Khan, N. Barnes and S. Gould "Conditional Generative Modeling via Learning the Latent Space," 9th International Conference on Learning Representations, (ICLR), 2021.

S. H. Khan, M. Hayat, S. W. Zamir, J. Shen and L. Shao, "Striking the Right Balance with Uncertainty," IEEE Conference on Computer Vision and Pattern Recognition, (CVPR), Long Beach, US, 2019. [Oral]

S. H. Khan, M. Hayat, M. Bennamoun, F. Sohel and R. Togneri, "Cost Sensitive Learning of Deep Feature Representations from Imbalanced Data," IEEE Transactions on Neural Networks and Learning Systems (TNNLS), 2017.

Career

Prior to joining MBZUAI, Khan was a senior scientist with the Inception Institute of Artificial Intelligence (2018-2020), and an honorary lecturer with Australian National University (ANU) since 2016. Previous roles include working as a research scientist with Data61-CSIRO from 2016-2018, and visiting researcher with National ICT Australia (NICTA), CRL, in 2015.

Khan acted as an investigator on several competitive research grants funded by government and commercial entities. Khan has also acted as a referee for international grant agencies such as the Australian and European Research Council (ARC and ERC), and IEEE Chair for Computer Society.

Khan is a recipient of several prestigious scholarships, including Fulbright and IPRS, and served as a program committee member for several premier conferences where he has won multiple outstanding reviewer awards. He was the guest editor for IEEE TPAMI and an area chair for IEEE CVPR 2022. He, alongside his collaborators, won the best paper award in ICPRAM 2020, and top ranks in CVPR-NTIRE 2019 and 2021 challenges on image enhancement.

Karthik Nandakumar

Associate Professor
of Computer Vision

Research

Nandakumar's primary research interests include computer vision, machine learning, biometric recognition, applied cryptography, and blockchain. Specifically, he is interested in research related to the development of secure, privacy-preserving, and trustworthy AI systems, robust collaborative learning algorithms for healthcare applications, and efficient machine learning algorithms for predictive maintenance in the energy sector.

Education

- **Ph.D. in computer science** from Michigan State University, USA
- **Master's degree in computer science** from Michigan State University, USA
- **Master's degree in statistics** from Michigan State University, USA
- **Master's degree in management of technology** from the National University of Singapore, Singapore
- **Bachelor of Engineering** from Anna University, India

Publishing

Nandakumar has co-authored two books titled *Introduction to Biometrics* (Springer, 2011) and *Handbook of Multibiometrics* (Springer, 2006). He has been awarded 11 U.S. patents and another 10 patent applications are under review.

Score normalization in multimodal biometric systems. A Jain, K Nandakumar, A Ross. Pattern recognition 38 (12), 2270-2285, 2005.

L. Lyu, J. Yu, K. Nandakumar, Y. Li, X. Ma, J. Jin, H. Yu, and K. S. Ng, "Towards Fair and Privacy-Preserving Federated Deep Models", IEEE Transactions on Parallel and Distributed Systems, Vol. 31, No. 11, pp. 2524-2541, November 2020.

Biometric template security. AK Jain, K Nandakumar, A Nagar. EURASIP Journal on advances in signal processing 2008, 1-17, 2008.

K. Nandakumar, N. Ratha, S. Pankanti, and S. Halevi, "Training Deep Neural Networks based on Encrypted Data", in The Bright and Dark Sides of Computer Vision: Challenges and Opportunities for Privacy and Security (CV-COPS 2019), CVPR Workshop, Long Beach, June 2019.

Fingerprint-based fuzzy vault: Implementation and performance. K. Nandakumar, AK Jain, S Pankanti. IEEE transactions on information forensics and security 2 (4), 744-757, 2007.

Likelihood ratio-based biometric score fusion. K. Nandakumar, Y Chen, SC Dass, A Jain. IEEE transactions on pattern analysis and machine intelligence 30 (2), 342-347, 2007.

Career

Prior to joining MBZUAI, Nandakumar was a research staff member at IBM Research – Singapore from 2014 to 2020 and a scientist at the Institute for Infocomm Research, A*STAR, Singapore from 2008 to 2014.

Nandakumar has received several awards including the 2008 Fitch H. Beach Outstanding Graduate Research Award from the College of Engineering at Michigan State University, the Best Paper Award from the Pattern Recognition journal (2005), the Best Scientific Paper Award (Biometrics Track) at ICPR 2008, and the 2010 IEEE Signal Processing Society Young Author Best Paper Award. He is a senior member of the IEEE.

Rao Muhammad Anwer

Assistant Professor
of Computer Vision

Research

Anwer's research interests are in visual object recognition, pedestrian detection and action recognition, efficient and robust deep learning models for comprehensive scene understanding, and human visual relationship detection. Current projects he is working on include: (1) Toward integrated and detailed image understanding; and (2) Learning visual recognition models with limited human supervision.

Education

- **Ph.D. in computer vision** from the Autonomous University of Barcelona, Spain
- **Master's degree in intelligent systems design** from the Chalmers University of Technology, Sweden

Publishing

Anwer has authored or co-authored more than 45 academic publications in the International Journal of Biological and Medical Sciences, the Proceedings of IEEE, and others, and has been cited more than 1500 times.

"Spatio-temporal Relation Modeling for Few-shot Action Recognition": Anirudh Thatipelli, Sanath Narayan, Salman Khan, Rao Muhammad Anwer, Fahad Shahbaz Khan, Bernard Ghanem, CVPR 2022

"PSTR: End-to-End One-Step Person Search with Transformers": Jiale Cao, Yanwei Pang, Rao Muhammad Anwer, Hisham Cholakkal, Jin Xie, Mubarak Shah, Fahad Shahbaz Khan, CVPR 2022

"Energy-based Latent Aligner for Incremental Learning": Joseph K J, Salman Khan, Fahad Shahbaz Khan, Rao Muhammad Anwer, Vineeth N Balasubramanian, CVPR 2022

"Handwriting Transformer": Ankan Kumar Bhunia, Salman Khan, Hisham Cholakkal, Rao Muhammad Anwer, Fahad Shahbaz Khan, Mubarak Shah, ICCV 2021

"Sipmask: Spatial information preservation for fast image video instance segmentation": Jiale Cao, Rao Muhammad Anwer, Hisham Cholakkal, Fahad Shahbaz Khan, Yanwei Pang, Ling Shao, ECCV 2020

"Deep contextual attention for human-object interaction detections": Tiancai Wang, Rao Muhammad Anwer, Muhammad Haris Khan, Fahad Shahbaz Khan, Yanwei Pang, Ling Shao, Jorma Laaksonen, ICCV 2019

Career

Prior to joining MBZUAI, Anwer was at Inception Institute of Artificial Intelligence (IIAI) in Abu Dhabi, United Arab Emirates working as a research scientist.

Before joining IIAI, he was a postdoctoral research fellow with Aalto University, Finland from 2014 to 2018.

Hisham Cholakkal

Assistant Professor
of Computer Vision

Research

Cholakkal's research aims at developing solutions that are well-aligned with real-world applications and is focused on four areas within computer vision: visual recognition; person-centric scene understanding; learning from limited supervision; and image generation. His recent research interests include object detection; image and video segmentation; object counting; image classification; pedestrian detection; person search; human-pose estimation; human-object interaction detection; activity recognition; crowd counting; few-shot/zero-shot learning; weakly supervised learning; image generation; AI for style imitation and AI for creativity.

Education

- **Ph.D. in computer science** (Computer Vision) from Nanyang Technological University (NTU), Singapore
- **Master's degree (M.Tech) in signal processing** from the Indian Institute of Technology (IIT), India

Publishing

Cholakkal has published papers in top scientific journals and conferences such as TPAMI, CVPR, ICCV, ECCV and AAAI.

H. Cholakkal, G. Sun, S. Khan, FS. Khan, L. Shao, L.V Gool, "Towards Partial. Supervision for Generic Object Counting in Natural Scenes", in IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2022.

J. Cao, RM. Anwer, H. Cholakkal, FS. Khan, Y Pang, and L. Shao, "SipMask: Spatial Information Preservation for Fast Image and Video Instance Segmentation", in Proceedings of the European Conference on Computer Vision (ECCV), 2020.

J. Cao, Y. Pang, RM. Anwer, H. Cholakkal, J. Xie, M. Shah, FS. Khan, "PSTR: End-to-End One-Step Person Search With Transformers," in Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2022.

J. Xie, H. Cholakkal, RM. Anwer, FS. Khan, Y Pang, L. Shao, and M. Shah, "Count-and Similarity-aware R-CNN for Pedestrian Detection", in Proceedings of the European Conference on Computer Vision (ECCV), 2020.

S Narayan, H Cholakkal, M Hayat, FS Khan, MH Yang, L Shao, "D2-Net: Weakly-Supervised Action Localization via Discriminative Embeddings and Denoised Activations", in Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV), 2021.

AK Bhunia, S Khan, H Cholakkal, RM Anwer, FS Khan, M Shah, "Handwriting Transformers", in Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV), 2021

Career

Cholakkal has diverse experiences across fundamental research, teaching, and product development at industry. He has several years of experience in leading research teams involved in commercial and fundamental research. Prior to joining MBZUAI, he worked as a research scientist at the Inception Institute of Artificial Intelligence (IIAI) in Abu Dhabi.

Before joining IIAI, he was a senior technical lead in the Computer Vision and Deep Learning Research team at Mercedes-Benz R and D, India. He has also worked as a researcher at BEL-Central Research Lab, India and Advanced Digital Sciences Center, Singapore.

In addition to authoring top-tier research articles and patents, he developed several computer vision frameworks that are successfully released as commercial products in various industries. He has served as a program committee member for several top conferences including CVPR, ICCV, NeurIPS, ICLR and ECCV.

Hang Dai

Assistant Professor
of Computer Vision

Research

Dai's research interests include geometric deep learning, deep-fake detection, 3D computer vision, computer vision techniques in autonomous driving, and medical image analysis with AI models. His current projects: (1) Intelligent object detection, dynamic scene and activity recognition for real-time UAV applications, and (2) Computer vision techniques in autonomous driving.

Education

- **Ph.D. in computer science** from the Department of Computer Science at the University of York, United Kingdom

Publishing

Dai has published papers in top scientific journals and conferences such as Proceedings of IEEE, ECCV, ACM, the Journal of Imaging and more.

G. Chen, H. Dai, T. Zhou, J. Shen, and L. Shao. Automatic Schelling Points Detection from Meshes. IEEE Transactions on Visualization and Computer Graphics (TVCG) 2022.

H. Dai, N Pears, P Huber, WAP Smith. 3D Morphable Models: The Face, Ear and Head, 3D Imaging, Analysis and Applications, 463-512, Springer, 2020.

H Dai, N Pears, W Smith, C Duncan, Statistical Modeling of Craniofacial Shape and Texture. International Journal of Computer Vision (IJCV) 2020.

Y. Li, H. Dai, Y. Ding. Pseudo-Stereo for Monocular 3D Object Detection in Autonomous Driving. Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2022.

S. Khan, H. Dai. Video Transformer for Deepfake Detection with Incremental Learning. Proceedings of ACM International Conference on Multimedia (ACM MM), 2021.

S. Luo, H. Dai, L. Shao, Y. Ding. M3DSSD: Monocular 3D Single Stage Object Detector, Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2021.

Career

Prior to joining MBZUAI, Dai worked as a research scientist at the Inception Institute of Artificial Intelligence (IIAI) in Abu Dhabi.

He was an overseas research scholar with the University of York from 2015 to 2018. His research was funded by NHS, Google, Royal Academy of Engineering and the Leverhulme Trust and QIDIS from the National Commissioning Group.

Dai served as a reviewer of ICCV, CVPR, ECCV and program committee member of AAAI.

Muhammad Haris Khan

Assistant Professor
of Computer Vision

Research

Khan's research interests span active topics in computer vision, including face-related tasks, visual domain adaptation and generalization, and visual tracking. He is also interested in unsupervised learning for instance-level to dense prediction tasks to leverage vast amounts of unlabeled data and human-object interaction detection tasks for a deeper understanding of human behaviors.

Education

- **Ph.D. in computer vision** from the University of Nottingham (UoN), United Kingdom
- **Master's in embedded digital systems** from University of Sussex, United Kingdom

Publishing

Khan has authored and co-authored several papers in top-ranked computer vision conferences. His overall peer-reviewed research has more than 2700 citations.

Muhammad Zaigham Zaheer, Arif Mehmood, Muhammad Haris Khan, Mattia Segu, Fisher Yu, Seung-Ik Lee, "Generative Cooperative Learning for Unsupervised Video Anomaly Detection". Accepted at IEEE/CVF (CVPR) 2022.

Muhammad Saad Saeed, Muhammad Haris Khan, Shah Nawaz, Muhammad Haroon Yousaf, Alessio Del Bue, "Fusion and Orthogonal Projection for Improved Face-Voice Association", Accepted at IEEE ICASSP 2022.

Muhammad Akhtar Munir, Muhammad Haris Khan, Muhammad Saquib Sarfraz, Mohsen Ali, "Synergizing between Self-Training and Adversarial Learning for Domain Adaptive Object Detection", Proc. NeurIPS 2021.

Muhammad Haris Khan, Talha Zaidi, Salman Khan, Fahad Shahbaz Khan, "Mode-Guided Feature Augmentation for Domain Generalization", Proc. BMVC 2021.

Muhammad Haris Khan, John McDonagh, Salman Khan, Muhammad Shahabuddin, Aditya Arora, Fahad Shahbaz Khan, Ling Shao, and Georgios Tzimiropoulos, "AnimalWeb: A Large-Scale Hierarchical Dataset of Annotated Animal Faces". Proc. IEEE/CVF (CVPR) 2020.

Tiancai Wang, Rao Muhammad Anwer, Muhammad Haris Khan, Fahad Shahbaz Khan, Yanwei Pang, Ling Shao, Jorma Laaksonen, "Deep Contextual Attention for Human-Object Interaction Detection", Proc. ICCV 2019.

Career

Prior to MBZUAI, Khan was a research scientist in the Inception Institute of Artificial Intelligence (IIAI), UAE.

Before joining IIAI, he served as an assistant professor at Comsats University Islamabad (CUI), Pakistan for two years. Earlier, he was a postdoctoral fellow at the University of Nottingham (UoN), United Kingdom for 1.5 years.

Prior to starting his Ph.D., he also served as a lecturer for three years at CUI, Pakistan. He is a recipient of the International Research Excellence Scholarship for his doctoral study.

Mohammad Yaqub

Assistant Professor
of Computer Vision

Research

Yaqub's research interest is in AI in healthcare applied to problems in medical image analysis (e.g, ultrasound, MRI and CT), radiomics and radiogenomics. He investigates and develops AI algorithms to solve real-world healthcare problems, explores fundamental machine learning methods such as continual learning and adversarial attacks and defense in the healthcare domain, and studies different healthcare challenges using natural language processing.

Education

- **Ph.D. in biomedical engineering** from the University of Oxford, United Kingdom

Publishing

Yaqub has published more than 40 peer-reviewed articles in top conferences and journals such as IEEE TMI, Medical Image Analysis, MICCAI and Ultrasound in Medicine and Biology and co-edited two books entitled: *Medical Imaging Understanding and Analysis*, 2020 and 2021.

M Z Atwany, A H Sahyoun and M Yaqub, "Deep Learning Techniques For Diabetic Retinopathy Classification: A Survey," in IEEE Access, 2022, doi: 10.1109/ACCESS.2022.3157632. [Impact factor: 3.367]

M Yaqub, B Kelly, JA Noble, AT Papageorghiou. The effect of maternal body mass index on fetal ultrasound image quality. Am J Obstet Gynecol. Published online April 2021. doi:10.1016/j.ajog.2021.04.248. [Impact factor: 6.502]

N Saeed, S E Hardan, K Abutalip, M Yaqub, Is it Possible to Predict MGMT Promoter Methylation from Brain Tumor MRI Scans using Deep Learning Models? In Medical Imaging with Deep Learning Conference, 2022.

I Sobirov, O Nazarov, H Alasmawi, M Yaqub, Automatic Segmentation of Head and Neck Tumor: How Powerful Transformers Are? In Medical Imaging with Deep Learning Conference, 2022.

N Saeed, R Al Majzoub, I Sobirov, M Yaqub, An Ensemble Approach for Patient Prognosis of Head and Neck Tumor Using Multimodal Data, HECTOK Challenge, MICCAI 2021.

S Srivastava, M Yaqub, K Nandakumar, Z Ge, D Mahapatra. Continual Domain Incremental Learning for Chest X-Ray Classification in Low-Resource Clinical Settings. In Domain Adaptation and Representation Transfer, and Affordable Healthcare and AI for Resource Diverse Global Health (pp. 226–238), 2021. Springer.

Career

Prior to joining MBZUAI, Yaqub was a postdoctoral fellow for six years in the Institute of Biomedical Engineering at the University of Oxford where he worked on several medical imaging problems.

Yaqub spent more than seven years in industry working as a consultant followed by a full position as vice president of engineering at Intelligent Ultrasound Limited, Oxfordshire, United Kingdom.

Yaqub has also worked as a lecturer at Oxford EMI Training and the IT Learning Centre, University of Oxford.

In addition to his full-time position with MBZUAI, Yaqub is a visiting fellow in the Nuffield Department of Clinical Neurosciences and the Oxford Acute Vascular Imaging Centre at the University of Oxford.

Shijian Lu

Adjunct Associate Professor
of Computer Vision

Research

Lu's research focuses on computer vision and sensing, image and video analytics, and deep learning. He has been working on scene text detection and recognition for years, contributing to a number of impactful benchmarking datasets as well as innovative detection and recognition techniques. In recent years, Lu has been studying how to tackle data collection and data annotation challenges in deep network training.

Education

- **Ph.D. in electrical and computer engineering** from the National University of Singapore, Singapore
- **Master's degree in electrical engineering** from the Xi'an Jiaotong University, China

Publishing

Lu has authored or co-authored more than 200 academic papers, and has filed up to 10 patents in the U.S. and EU. His developed technology has been successfully licensed to industry and deployed in daily operations.

Guan, D., Huang, J., Xiao, A., & Lu, S. (2022). Unbiased subclass regularization for semi-supervised semantic segmentation. CVPR.

Zhan, F. Z., Zhang, J., Yu, Y., Wu, R., & Lu, S. (2022). Modulated contrast for versatile image translation. CVPR.

Zhang, G., Luo, Z., Yu, Y., Cui, K., & Lu, S. (2022). Accelerating DETR convergence via semantic-aligned matching. CVPR.

Zhang, J., Huang, J., Tian, Z. T., & Lu, S. (2022). Spectral unsupervised domain adaptation for visual recognition. CVPR.

Zhou, C., Luo, Z. L., Luo, Y., Liu, T., Pan, L., Cai, Z., Zhao, H., & Lu, S. (2022). PTTR: Relational 3d point cloud object tracking with transformer. CVPR.

Xue, C., Tian, Z., Zhan, F., Lu, S., & Bai, S. (2022). Fourier document restoration for robust document dewarping and recognition. CVPR.

Career

Lu is currently an associate professor (tenured) in the School of Computer Science and Engineering, Nanyang Technological University (NTU). He has held an adjunct position at MBZUAI since late 2021.

Before joining NTU in 2017, he took a number of leadership roles in the Institute for Infocomm Research (I2R), Agency for Science, Technology, and Research (A*SATR) in Singapore, including head of the Visual Attention Lab, deputy head of the Satellite Department, co-chair of the Image and Pervasive Access Laboratory (a CNRS overseas laboratory hosted by A*STAR in Singapore).

Lu's research focuses on computer vision and sensing, image and video analytics, and deep learning. He won a number of international benchmarking competitions such as DIBCO2009, H-DIBCO2010, DIBCO2013, RRC2013, ANWRESH-2014, etc.

Shahrukh Hashmi

Adjunct Associate Professor
of Computer Vision

Research

Hashmi's research interests include premature aging, GVHD, healthcare, IoTs, the Metaverse, and blockchains. He is also involved in stem cell therapeutics, particularly in regenerative hematology.

Education

- **4BMT Fellowship - Blood and Marrow Transplant Program** at James P. Wilmot Cancer Center, University of Rochester Medical Center, USA
- **Fellow - hematology/oncology** at Strong Memorial Hospital, University of Rochester Medical Center, USA
- **Resident - Combined Preventive/Internal Medicine Program** at Griffin Hospital, USA
- **Master's of public health** from Yale School of Public Health (Division of Chronic Disease Epidemiology), USA
- **MB BS in medical education - MBBS** from Baqai Medical University, Pakistan
- **Fellow of Science (undergraduate)** from DHA College for Men, Pakistan

Publishing

Hashmi has authored more than 200 articles in peer-reviewed journals, including in JAMA, Lancet, and in NEJM.

Senolytics in idiopathic pulmonary fibrosis: results from a first-in-human, open-label, pilot study

JN Justice, AM Nambiar, T Tchkonia, NK LeBrasseur, R Pascual, et al. EBioMedicine 40, 554-563, 2019.

Senolytics decrease senescent cells in humans: Preliminary report from a clinical trial of Dasatinib plus Quercetin in individuals with diabetic kidney disease. LTJ Hickson, LGPL Prata, SA Bobart, TK Evans, N Giorgadze, SK Hashmi, et al. EBioMedicine 47, 446-456, 2019.

Survival after mesenchymal stromal cell therapy in steroid-refractory acute graft-versus-host disease: systematic review and meta-analysis. S Hashmi, M Ahmed, MH Murad, MR Litzow, RH Adams, LM Ball, et al. The Lancet Haematology 3 (1), e45-e52, 2016.

Increasing use of allogeneic hematopoietic cell transplantation in patients aged 70 years and older in the United States. L Muffly, MC Pasquini, M Martens, R Brazauskas, X Zhu, K Adekola, et al. Blood, The Journal of the American Society of Hematology 130 (9), 1156-1164, 2017.

Lessons learned from large-scale, first-tier clinical exome sequencing in a highly consanguineous population. D Monies, M Abouelhoda, M Assoum, N Moghrabi, R Rafiullah, et al. The American Journal of Human Genetics 104 (6), 1182-1201, 2019.

Career

Hashmi has been at Mayo Clinic for approximately 10 years. He started Mayo Clinic's first BMT survivorship program.

He has served as PI or Co-PI on many industry-sponsored and NIH-sponsored trials.

Hashmi chairs many national or international professional committees/ groups including being the chair of the Worldwide Network for Blood and Marrow Transplant's Nuclear Accident committee (Geneva, Switzerland), founding chair of American Society for Blood and Marrow Transplant Society's Survivorship SIG (Chicago, Illinois), and co-chair of the Center for International Blood and Marrow Transplant Registry's (CIBMTR) Health Services Committee (Milwaukee, Wisconsin). He is currently the chair of the Department of Hematology/Oncology at the SSMC, Abu Dhabi, UAE; and the chair of SEHA Oncology Council.

Yuanzhi Li

Affiliated Assistant Professor
of Computer Vision

Research

Li's primary research area is deep learning theory, focusing on (1) understanding the hierarchical feature learning process in neural networks and how it's better than shallow learning methods; (2) how the choice of optimization algorithms affects the training speed of different types of neural networks, and how it influences the generalization of the learned solution; (3) how to use pre-trained neural networks in downstream applications more effectively.

Education

- **Ph.D. in computer science** from Princeton University, USA
- **Bachelor of computer science and mathematics** from Tsinghua University, China

Publishing

Li has authored or co-authored more than 50 research papers with over 5600 citations.

A convergence theory for deep learning via over-parameterization. Z Allen-Zhu, Y Li, Z Song. International Conference on Machine Learning, 242-252, 2019.

Learning and generalization in overparameterized neural networks, going beyond two layers. Z Allen-Zhu, Y Li, Y Liang. Advances in neural information processing systems 32, 2019.

Convergence analysis of two-layer neural networks with relu activation. Y Li, Y Yuan. Advances in neural information processing systems 30, 2017.

Learning overparameterized neural networks via stochastic gradient descent on structured data. Y Li, Y Liang. Advances in Neural Information Processing Systems 31, 2018.

A theoretical analysis of NDCG ranking measures. Y Wang, L Wang, Y Li, D He, W Chen, TY Liu. Proceedings of the 26th annual conference on learning theory (COLT 2013) 8, 6, 2013.

Career

Prior to joining MBZUAI, Li was a postdoctoral researcher at Stanford and is an assistant professor in the Carnegie Mellon University (CMU) Department of Machine Learning.

Min Xu

Affiliated Assistant Professor
of Computer Vision

Research

Xu's research areas of interest include cryo-electron tomography (Cryo-ET) analysis, and biomedical image analysis.

Education

- **Ph.D. in computational biology and bioinformatics** from the University of Southern California (USC), USA
- **Master's of Science** from the School of Computing at the National University of Singapore, Singapore
- **Master's of Arts in applied mathematics** from the University of Southern California (USC), USA
- **Bachelor of Engineering in computer science** from the Beihang University, China

Publishing

Xu has published more than 70 research papers in prestigious peer-reviewed conferences and journals, such as CVPR, ICCV, AAAI, ISMB, MICCAI, PNAS, Bioinformatics, PLOS Computational Biology, Structure, and JSB.

Uddin M, Howe G, Zeng X, Xu M. Harmony: A Generic Unsupervised Approach for Disentangling Semantic Content from Parameterized Transformations. IEEE conference on computer vision and pattern recognition (CVPR 2022).

Wang T, Li X, Yang P, Hu G, Zeng X, Huang S, Xu C, Xu M. Boosting Active Learning via Improving Test Performance. AAAI Conference on Artificial Intelligence. (AAAI 2022) arXiv:2112.05683

Zeng X, Howe G, Xu M. End-to-end robust joint unsupervised image alignment and clustering. International Conference on Computer Vision (ICCV 2021).

Zhu X, Chen J, Zeng X, Liang J, Li C, Liu S, Behpour S, Xu M. Weakly Supervised 3D Semantic Segmentation Using Cross-Image Consensus and Inter-Voxel Affinity Relations. International Conference on Computer Vision (ICCV 2021).

Du X, Wang H, Zhu Z, Zeng X, Chang Y, Zhang J, Xu M. Active learning to classify macromolecular structures in situ for less supervision in cryo-electron tomography. Bioinformatics. doi:10.1093/bioinformatics/btab123 arXiv:2102.12040

Zeng X, Xu M. Gum-Net: Unsupervised geometric matching for fast and accurate 3D subtomogram image alignment and averaging. IEEE conference on computer vision and pattern recognition (CVPR 2020).

Career

Xu's career has centered on developing AI methods for the analysis of biomedical images and other biomedical data, in particular, Cellular Cryo-Electron Tomography (Cryo-ET) 3D image data. He is currently also an Assistant Professor at the Computational Biology Department within the School of Computer Science at Carnegie Mellon University, USA. He was a postdoctoral researcher at USC. He is a recipient of USA NIH and NSF awards.

Le Song

Chair, Machine Learning Department
Professor of Machine Learning

Research

Song's research interests are in machine learning methods and algorithms for complex and dynamic data including structured prediction, neuro-symbolic integration, and AI for healthcare and drug design.

Education

- **Ph.D. in computer science** from the University of Sydney and National ICT, Australia

Publishing

Song has published more than 160 papers in peer-reviewed, top machine learning conferences and journals such as NeurIPS, ICML, ICLR, AISTATS and JMLR.

Learning Temporal Rules from Noisy Timeseries Data. K Samel, Z Zhao, B Chen, S Li, D Subramanian, I Essa, L Song. arXiv preprint arXiv:2202.05403. 2022.

Sphereface: Deep hypersphere embedding for face recognition. W Liu, Y Wen, Z Yu, M Li, B Raj, L Song. Proceedings of the IEEE conference on computer vision and pattern. 2017.

Molecule Generation for Drug Design: a Graph Learning Perspective. N Yang, H Wu, J Yan, X Pan, Y Yuan, L Song. arXiv preprint arXiv:2202.09212. 2022.

Learning combinatorial optimization algorithms over graphs. E Khalil, H Dai, Y Zhang, B Dilkina, L Song. Advances in neural information processing systems 30, 2017.

Method and apparatus for processing user interaction sequence data. X Chang, J Wen, X Liu, L Song, Y Qi. US Patent 11,250,088. 2022.

A Hilbert space embedding for distributions. A Smola, A Gretton, L Song, B Schölkopf. International Conference on Algorithmic Learning Theory, 13-31, 2007.

Career

Prior to joining MBZUAI, Song was an associate professor of computational science and engineering and the associate director of Center for Machine Learning at the Georgia Institute of Technology in the USA.

He spent several years at various institutes such as Georgia Institute of Technology, Google Research, Carnegie Mellon University and National ICT Australia.

Song's remarkable works won several best paper awards at the ACM Conference on Recommendation System (Recsys) in 2016, Artificial Intelligence and Statistics (AISTATS) in 2016, IEEE International Parallel and Distributed Processing Symposium (IPDPS) in 2015, Neural Information Processing Systems (NeurIPS) in 2013, and International Conference on Machine Learning (ICML) in 2010.

Song is a chair of the 39th International Conference on Machine Learning (ICML 2022).

Mohsen Guizani

Professor of Machine Learning

Research

Guizani's research interests are in the field of applied machine learning and artificial intelligence, Internet of Things (IoT), intelligent autonomous systems, smart cities, and cybersecurity.

Education

- **Ph.D. in computer engineering** from Syracuse University, Syracuse, New York, USA
- **Master's in computer engineering** from Syracuse University, Syracuse, New York, USA
- **Bachelor of Science (with distinction)** from Syracuse University, Syracuse, New York, USA

Publishing

Guizani has published extensively in high-impact journals and conferences. He has authored/co-authored 10 books and more than 800 technical papers in top journals and conferences and has been granted more than 10 U.S. patents.

Internet of things: A survey on enabling technologies, protocols, and applications. A Al-Fuqaha, M Guizani, M Mohammadi, M Aledhari, M Ayyash. IEEE communications surveys & tutorials 17 (4), 2347-2376, 2015.

Unmanned aerial vehicles (UAVs): A survey on civil applications and key research challenges. H Shakhatreh, AH Sawalmeh, A Al-Fuqaha, Z Dou, E Almaita, I Khalil, et al. Ieee Access 7, 48572-48634, 2019.

Deep learning for IoT big data and streaming analytics: A survey. M Mohammadi, A Al-Fuqaha, S Sorour, M Guizani. IEEE Communications Surveys & Tutorials 20 (4), 2923-2960, 2018.

MeDShare: Trust-less medical data sharing among cloud service providers via blockchain. QI Xia, EB Sifah, KO Asamoah, J Gao, X Du, M Guizani. IEEE access 5, 14757-14767, 2017.

5G wireless backhaul networks: challenges and research advances. X Ge, H Cheng, M Guizani, T Han. IEEE network 28 (6), 6-11, 2014.

A comprehensive review of the COVID-19 pandemic and the role of IoT, drones, AI, blockchain, and 5G in managing its impact. V Chamola, V Hassija, V Gupta, M Guizani. Ieee access 8, 90225-90265, 2020.

Career

Before joining MBZUAI, Guizani served in multiple administrative positions in the USA and the Gulf region, such as the Founding Associate Vice President for Graduate Studies at QU, Chair of the ECE Department at the University of Idaho, Chair of the Computer Science Department at Western Michigan University and Professor at the University of Missouri.

He was elevated to the IEEE Fellow in 2009 for his contribution to "quality of service in broadband and ad hoc wireless networks." He is a highly cited researcher and was listed as a Clarivate Analytics Highly Cited Researcher in Computer Science in 2019, 2020 and 2021.

Guizani has won several research awards including the 2015 IEEE Communications Society Best Transaction Paper Award as well as four Best Paper Awards from top conferences, such as IEEE ICC and IEEE Globecom.

Kun Zhang

Associate Professor
of Machine Learning
Director, Center for Integrative Artificial Intelligence (CIAI)

Research

Zhang's research interests lie in machine learning and artificial intelligence, especially in causal discovery and inference, causal representation learning, and machine learning under data heterogeneity. He aims to make causal learning and reasoning transparent in science, AI systems, and human society. On the application side, he is interested in biology, neuroscience, computer vision, computational finance, and climate analysis. His research has been motivated by real problems in healthcare, biology, neuroscience, computer vision, computational finance, and climate analysis.

Education

- **Senior research scientist** at the Max-Planck Institute for Intelligent Systems, Germany
- **Postdoctoral fellow** at the University of Helsinki, Finland
- **Ph.D. in computer science** from the Chinese University of Hong Kong
- **Bachelor of Science in automation** from the University of Science and Technology of China, China

Publishing

Zhang co-authored a best student paper at UAI 2010, received the best benchmark award of the causality challenge 2008, and co-authored a best paper finalist paper at CVPR 2019.

Biwei Huang, Fan Feng, Chaochao Lu, Sara Magliacane, Kun Zhang, "AdaRL: What, Where, and How to Adapt in Transfer Reinforcement Learning," International Conference on Learning Representations (ICLR) 2022 (spotlight)

Weiran Yao, Yuewen Sun, Alex Ho, Changyin Sun, Kun Zhang, "Learning Temporally Latent Causal Processes from General Temporal Data," International Conference on Learning Representations (ICLR) 2022

Petar Stojanov, Zijian Li, Mingming Gong, Ruichu Cai, Jaime G. Carbonell, Kun Zhang, "Domain Adaptation with Invariant Representation Learning: What Transformations to Learn?" Neural Information Processing Systems (NeurIPS) 2021

Jeffrey Adams, Niels Richard Hansen, Kun Zhang, "Identification of Partially Observed Linear Causal Models: Graphical Conditions for the Non-Gaussian and Heterogeneous Cases," Conference on Neural Information Processing Systems (NeurIPS) 2021

K. Zhang*, M. Gong*, P. Stojanov, B. Huang, Qingsong Liu, and C. Glymour, "Domain Adaptation as a Problem of Inference on Graphical Models," Conference on Neural Information Processing Systems (NeurIPS) 2020

Feng Xie, Ruichu Cai, Biwei Huang, Clark Glymour, Zhifeng Hao, Kun Zhang, "Generalized Independent Noise Condition for Estimating Linear Non-Gaussian Latent Variable Causal Graphs," Conference on Neural Information Processing Systems (NeurIPS) 2020 (spotlight).

Career

Zhang maintains an associate professorship at Carnegie Mellon University (CMU) in the USA to explore machine learning and AI, especially causal learning and reasoning, at MBZUAI.

Zhang formulates principles and develops methods for automated causal discovery or causal representation learning from various kinds of data; investigates learning problems including transfer learning, representation learning, and deep learning from a causal view; and studies the philosophical foundations of causation and various machine learning tasks.

Zhang is a general and program chair of the 1st Conference on Causal Learning and Reasoning (CleaR 2022) and a program chair of the 38th Conference on Uncertainty in Artificial Intelligence (UAI 2022).

Martin Takáč

Associate Professor
of Machine Learning

Research

Takáč's current research interests include the design and analysis of algorithms for machine learning including large-scale convex/non-convex optimization problems in a distributed and federated learning setting, applications of machine learning and high performance computing (HPC).

Education

- **Ph.D. in mathematics** from the University of Edinburgh, United Kingdom
- **Master of Science in mathematics** from Comenius University, Slovakia
- **Bachelor of Science in mathematics** from Comenius University, Slovakia

Publishing

Takáč currently serves as an associate editor for Mathematical Programming Computation, Journal of Optimization Theory and Applications, and Optimization Methods and Software.

Iteration complexity of randomized block-coordinate descent methods for minimizing a composite function. P Richtárik, M Takáč. Mathematical Programming 144 (1), 1-38, 2014.

Parallel coordinate descent methods for big data optimization. P Richtárik, M Takáč. Mathematical Programming, Series A, 1-52, 2015

Reinforcement learning for solving the vehicle routing problem. M Nazari, A Oroojlooy, LV Snyder, M Takáč. Conference on Neural Information Processing Systems, NeurIPS, 2018.

SARAH: A novel method for machine learning problems using stochastic recursive gradient. L Nguyen, J Liu, K Scheinberg, M Takáč. In 34th International Conference on Machine Learning, ICML, 2017

Communication-efficient distributed dual coordinate ascent. M Jaggi, V Smith, M Takác, J Terhorst, S Krishnan, T Hofmann, MI Jordan. Advances in neural information processing systems 27, 2014.

Distributed coordinate descent method for learning with big data. P Richtárik, M Takác. Journal of Machine Learning Research 17, 1-25, 2016

Career

Prior to joining MBZUAI, Takáč was an associate professor in the Department of Industrial and Systems Engineering at Lehigh University in Pennsylvania, USA.

He received several awards during this period, including the Best Ph.D. Dissertation Award by the OR Society (2014), Leslie Fox Prize (2nd Prize; 2013) by the Institute for Mathematics and its Applications, and INFORMS Computing Society Best Student Paper Award (runner up; 2012).

Takáč received funding from various U.S. National Science Foundation programs, including through a TRIPODS Institute grant awarded to him and his collaborators at Lehigh, Northwestern, and Boston University.

He is an area chair at machine learning conferences like ICML, NeurIPS, ICLR, and AISTATS.

Bin Gu

Assistant Professor
of Machine Learning

Research

Gu's research interests focus on large scaling optimization in machine learning, spiking neural networks, and data mining.

Education

- **Ph.D. in computer science** from the Nanjing University of Aeronautics and Astronautics, China
- **Bachelor of Science in computer science** from the Nanjing University of Aeronautics and Astronautics, China

Publishing

Gu has published 70 or more papers, with more than 3000 citations.

Incremental support vector learning for ordinal regression. B Gu, VS Sheng, KY Tay, W Romano, S Li. IEEE Transactions on Neural networks and learning systems 26 (7), 1403-1416, 2014.

A Robust Regularization Path Algorithm for -Support Vector Classification. B Gu, VS Sheng. IEEE Transactions on neural networks and learning systems 28 (5), 1241-1248, 2016.

Incremental learning for v-support vector regression. B Gu, VS Sheng, Z Wang, D Ho, S Osman, S Li. Neural networks 67, 140-150, 2015.

Structural minimax probability machine. B Gu, X Sun, VS Sheng. IEEE Transactions on Neural Networks and Learning Systems 28 (7), 1646-1656, 2016

Direct estimation of cardiac biventricular volumes with an adapted bayesian formulation. Z Wang, MB Salah, B Gu, A Islam, A Goela, S Li. IEEE Transactions on Biomedical Engineering 61 (4), 1251-1260, 2014.

Career

Prior to joining MBZUAI, Gu was a full professor of Nanjing University of Information Science and Technology in China. He was a postdoctoral fellow with the University of Western Ontario from 2013 to 2015, with the University of Texas at Arlington from 2016 to 2017, and the University of Pittsburgh from 2017 to 2018.

Gu served as a program committee member or reviewer for several leading machine learning and data mining conferences and journals such as NIPS, ICML, KDD, AAAI, TPAMI, JMLR, and a senior program committee member of IJCAI 2019 to 2021.

Qirong Ho

Assistant Professor
of Machine Learning

Research

Ho's primary area of research interest is in software systems for the industrialization of machine learning (ML) programs. These ML software systems must enable, automate, and optimize over multiple tasks: composition of elementary ML program and systems "building blocks" to create sophisticated applications, scaling to very large data and model sizes, resource allocation and scheduling, hyperparameter tuning, and code-to-hardware placement.

Education

- **Ph.D. in machine learning** from Carnegie Mellon University, Pittsburgh, USA
- **Bachelor of Science in computational biology** from Carnegie Mellon University, USA

Publishing

Ho has published more than 70 papers with more than 3400 citations. He holds U.S. patents in the areas of distributed deep learning and machine learning, AI operating systems, and elastic management of machine learning computing.

Pollux: Co-adaptive cluster scheduling for goodput-optimized deep learning (OSDI, 2021)

Poseidon: An efficient communication architecture for distributed deep learning on GPU clusters (USENIX ATC, 2017)

Strategies and principles of distributed machine learning on big data (Engineering, Vol 2, Issue 2, 2016)

Petuum: A new platform for distributed machine learning on big data (IEEE Transactions on Big Data, Vol 1(2), 2015)

More effective distributed ml via a stale synchronous parallel parameter server (NeurIPS, 2013)

Analyzing Time-Evolving Networks using an Evolving Cluster Mixed Membership Stochastic Blockmodel. (*Handbook of Mixed Membership Models and its Applications*, Chapter 22, 2014)

Career

Ho is co-founder and CTO at Petuum Inc., a unicorn AI startup which has been recognized as a World Economic Forum Tech Pioneer for creating standardized building blocks that enable assembly-line production of AI, in a manner that is affordable, sustainable, scalable, and requires less training of AI workers.

Ho is a member of the Technical Committee for the Composable, Automatic and Scalable ML (CASL) open-source consortium.

His doctoral thesis received the 2015 SIGKDD Dissertation Award (runner-up).

Dr. Samuel Horváth

Assistant Professor
of Machine Learning

Research

Horváth's research interests lie at the intersection of mathematics, computer science, machine learning, optimization, and statistics, with a particular focus on federated learning.

Education

- **Ph.D. in statistics** from King Abdullah University of Science and Technology (KAUST), Kingdom of Saudi Arabia
- **Master's in statistics** from King Abdullah University of Science and Technology (KAUST), Kingdom of Saudi Arabia
- **Bachelor (Summa Cum Laude) in mathematics of economics and finance** from Comenius University, Slovakia

Publishing

Horváth's research has been published in leading AI conferences such as ICML, NeurIPS or ICLR.

"Fedshuffle: Recipes for better use of local work in federated learning", S Horváth, M Sanjabi, L Xiao, P Richtárik, M Rabbat, arXiv preprint arXiv:2204.13169

"Adaptivity of Stochastic Gradient Methods for Nonconvex Optimization", S Horváth, L Lei, P Richtárik, MI Jordan,SIAM Journal on Mathematics of Data Science (SIMODS)

"FjORD: Fair and Accurate Federated Learning under heterogeneous targets with Ordered Dropout", S Horváth, S Laskaridis, M Almeida, I Leontiadis, SI Venieris, ND Lane, 35th Conference on Neural Information Processing Systems (NeurIPS 2021)

"A Better Alternative to Error Feedback for Communication-Efficient Distributed Learning", S Horváth, P Richtárik, International Conference on Learning Representations (ICLR 2021)

Analyzing Time-Evolving Networks using an Evolving Cluster Mixed Membership Stochastic Blockmodel. (*Handbook of Mixed Membership Models and its Applications*, Chapter 22, 2014)

Career

Prior to joining MBZUAI, Horváth completed his M.Sc. (2018) and Ph.D. (2022) at King Abdullah University of Science and Technology (KAUST) in Kingdom of Saudi Arabia. He has a relatively rich industrial experience obtained via research internships, including Amazon Scalable Machine Learning, Germany (2019), Samsung AI Centre, United Kingdom (2020), and Facebook AI Research, Canada (2021).

He received several awards during his studies, including a Best Paper Award at the NeurIPS Workshop on Scalability, Privacy, and Security in Federated Learning (2020), the Best Poster Award at the Data Science Summer School (DS3), Ecole Polytechnique, France (2018), the Best Reviewer Award at NeurIPS (2020). Horváth regularly serves as a program committee member for leading machine learning journals and conferences, including the Journal of Machine Learning, ICML, and NeurIPS.

Shangsong Liang

Assistant Professor
of Machine Learning

Research

Liang's research interests lie in the field of information retrieval, data mining, AI, and machine learning (especially deep learning).

Education

- **Visiting postdoctoral researcher** at the University of Massachusetts Amherst, USA
- **Postdoctoral researcher** at the University of Amsterdam, The Netherlands
- **Ph.D. in computer science** from the University of Amsterdam, The Netherlands

Publishing

Liang has published more than 70 peer-reviewed papers, most of which are in top-tier venues such as SIGIR, KDD, NeurIPS, WWW, AAAI, IJCAI, WSDM, CIKM, TKDE, TOIS, and TKDD. They cover topics related to graph neural networks, embedding learning, pre-training models, meta learning, contrastive learning, variational auto-encoder models, mining in data streams, clustering, web search, personalized search, search result diversification, learning to rank, recommendation systems, language models, and expert retrieval.

Jinyuan Fang, Zaiqiao Meng, Qiang Zhang, and Shangsong Liang. Structure-Aware Random Fourier Kernel for Graphs, Neural Information Processing Systems 2021, NeurIPS 2021. Full paper. 2021.

Shangsong Liang, Yupeng Luo, and Zaiqiao Meng. Profiling Users for Question Answering Communities via Flow-based Constrained Co-embedding Model. ACM Transactions on Information Systems (TOIS), 2021.

Shangsong Liang, Zhuo Ouyang, and Zaiqiao Meng. A Normalizing Flow-based Co-embedding Model for Attributed Networks. ACM Transactions on Knowledge Discovery from Data (TKDD), 2021.

Jinyuan Fang, Shangsong Liang, Zaiqiao Meng, and Maarten de Rijke. Hyperspherical Variational Co-embedding for Attributed Networks. ACM Transactions on Information Systems (TOIS), 2021.

Yaoxin Pan, Zaiqiao Meng, Shangsong Liang. Personalized, Sequential, Attentive, Metric-Aware Product Search. ACM Transactions on Information Systems (TOIS), 2021.

Shangsong Liang, Shaowei Tang, Zaiqiao Meng, and Qiang Zhang. Cross-Temporal Snapshot Alignment for Dynamic Networks. IEEE Transactions on Knowledge and Data Engineering (TKDE). 2021.

Career

Prior to joining MBZUAI, Liang was a research scientist at the King Abdullah University of Science and Technology (KAUST) and an associate researcher at the University College London (UCL).

Liang is an editor member of the journal of Information Processing and Management, and a Young Associate Editor-in-Chief of the Journal of Computer Science and Technology since 2021. He is PC member and reviewer in several conferences and journals.

Liang has received various awards/honors such as the SIGIR 2017 Outstanding Reviewer Award, Outstanding Contribution for instructing Data Mining course from the International Petroleum Engineers, the Kingdom of Saudi Arabia Section.

Huan Xiong

Assistant Professor
of Machine Learning

Research

Xiong's research interests include machine learning and discrete mathematics. More specifically, including expressive power and complexity of deep neural networks, few-shot learning and domain generalization, and combinatorial optimization.

Education

- **Ph.D. in mathematics** from the Institute of Mathematics, University of Zurich, Switzerland
- **Master's degree in mathematics** from the School of Mathematical Sciences, Peking University, China
- **Bachelor of Science in mathematics** from the School of Mathematical Sciences, Peking University, China

Publishing

Xiong has authored or co-authored more than 35 academic publications in ICML, the Proceedings of IEEE, and others, and has been cited hundreds of times.

H. Xiong, M. Yu, L. Liu, F. Zhu, J. Qin, F. Shen, L. Shao. A Generalized Method for Binary Optimization: Convergence Analysis and Applications, TPAMI 2021.

G. Xie, J. Liu, H. Xiong, L. Shao. Scale-Aware Graph Neural Network for Few-Shot Semantic Segmentation, CVPR 2021.

G. Xie, J. Liu, H. Xiong, Y. Yao, L. Shao. Few-Shot Semantic Segmentation with Cyclic Memory Network, ICCV 2021.

H. Xiong, L. Huang, M. Yu, L. Liu, F. Zhu, and L. Shao. On the Number of Linear Regions of Convolutional Neural Networks, ICML 2020.

Several Fundamental Problems in Deep Learning and Meta-Learning. MBZUAI Start-Up Fund, PI, 1,817,244 AED in total, three years.

Energy-based Probing for Spiking Neural Networks. TII Fund, co-PI, 5,874,400 AED in total, three years.

Career

Prior to joining MBZUAI, Xiong was a research scientist at the Inception Institute of Artificial Intelligence (IIAI), Abu Dhabi, United Arab Emirates. He was a postdoctoral researcher at the Institute for Advanced Mathematical Research, University of Strasbourg, France, from 2016 to 2018.

Xiong hosted two research projects funded by the Swiss National Science Foundation (SNSF) and the French National Centre for Scientific Research (CNRS) respectively.

Zhiqiang Xu

Assistant Professor
of Computer Vision

Research

Zhiqiang research interests lie at the intersection of numerical computation, stochastic optimization, and Riemannian optimization. He is also interested in deep learning, clustering, community detection, topic modeling, etc. His recent ongoing works are about faster alternating least-squares for CCA, comprehensively tight analysis of gradient descent for PCA, accelerated inexact power methods, and Riemannian search for eigenvector computation.

Education

- **Ph.D. in computer engineering** from the Nanyang Technological University, Singapore

Publishing

Li has authored or co-authored more than 50 research papers with more than 5600 citations.

Zhiqiang Xu and Ping Li. Faster Noisy Power Method. ALT 2022

Zhiqiang Xu and Ping Li. A Comprehensively Tight Analysis of Gradient Descent for PCA. NeurIPS 2021

Zhiqiang Xu and Ping Li. On the Riemannian Search for Eigenvector Computation. JMLR 2021

Zhiqiang Xu and Ping Li. On the Faster Alternating Least-Squares for CCA. AISTATS 2021

Zhiqiang Xu and Ping Li. Towards Practical Alternating Least-Squares for CCA. NeurIPS 2019

Zhiqiang Xu. Gradient descent meets shift-and-invert preconditioning for eigenvector computation. NeurIPS 2018

Career

Prior to joining MBZUAI, Zhiqiang was a senior research scientist with Baidu Research in China. Zhiqiang served as a reviewer for several academic activities of NeurIPS, ICML, ICLR, IJCAI, AAAI in various years. He also has industrial experience in automatic optical inspection (AOI) for TFT-LCD panels and solar wafers, data analytics for airlines and insurances.

Eric Moulines

Adjunct Professor
of Machine Learning

Research

Moulines' current research topics include high-dimensional Monte Carlo sampling methods, stochastic optimization, and generative models (variational autoencoders, generative adversarial networks). He applies these various methods to uncertainty quantification, Bayesian inverse problems, and control of complex systems.

Education

- **Degree in engineering** from Ecole Polytechnique, France
- **Ph.D. in electrical engineering** from Ecole Nationale Supérieure des Télécommunication, France

Publishing

Moulines has published more than 120 articles in leading journals in signal processing, computational statistics, and applied probability, and more than 300 proceedings at major conferences on signal processing and machine learning.

Gersende Fort, Pierre Gach, and Eric Moulines. Fast incremental expectation maximization for finite-sum optimization: nonasymptotic convergence. Statistics and Computing, 31(4):1–24, 2021.

Aymeric Dieuleveut, Gersende Fort, Eric Moulines, and Genevieve Robin. Federated-EM with heterogeneity mitigation and variance reduction. In Advances in Neural Information Processing Systems, volume 35, 2021.

Alain Durmus, Eric Moulines, Alexey Naumov, Sergey Samsonov, Kevin Scaman, and Hoi-To Wai. Tight high probability bounds for linear stochastic approximation with fixed stepsize. In Advances in Neural Information Processing Systems, volume 34, 2021.

Alain Durmus, Eric Moulines, Eero Saksman, et al. Irreducibility and geometric ergodicity of Hamiltonian Monte Carlo. Annals of Statistics, 48(6):3545–3564, 2020.

Geneviève Robin, Olga Klopp, Julie Josse, Eric Moulines, and Robert´ Tibshirani. Main effects and interactions in mixed and incomplete data frames. Journal of the American Statistical Association, 115 (ja):1292–1303, 2020. doi: 10.1080/01621459.2019.1623041. URL https://doi.org/10.1080/01621459.2019.1623041.

Alain Durmus, Eric Moulines, and Marcelo Pereyra. Efficient Bayesian computation by proximal Markov chain Monte Carlo: when Langevin meets Moreau. SIAM J. Imaging Sci., 11(1):473– 506, 2018. ISSN 1936-4954. doi: 10.1137/16M1108340. URL https://doi.org/10.1137/16M1108340

Career

In 1990, Moulines joined the Signal and Image Processing Department at Télécom ParisTech, where he was appointed full professor in 1996. In 2015, he moved to the Centre for Applied Mathematics at Ecole Polytechnique, where he is currently professor of statistics. His areas of expertise include computational statistics (Monte Carlo simulations, stochastic optimization), probabilistic machine learning, statistical signal processing, and time series analysis (sequential Monte Carlo methods, nonlinear filtering). He is a EURASIP and IMS Fellow.

His current research themes aim to solve the challenges related to the need for rapid analysis of computational statistics created by ever-larger datasets. The four themes include: (1) Understanding and optimizing principled approximate inference in complex statistical models; (2) Develop principled statistical approaches for massive data sets and high-dimensional models; (3) Federated and distributed computational statistics; and (4) Theory and methodology for optimizing high-dimensional algorithms.

Najwa Aaraj

Adjunct Professor of Machine Learning
Chief Researcher at the Technology Innovation Institute (TII) Cryptography Research Center

Research

Aaraj is the chief researcher of the Cryptography Research Center at TII. She leads the research and development of cryptographic technologies, including post-quantum cryptography (PQC) software libraries and hardware implementations, lightweight cryptographic libraries for embedded and RF systems, cryptanalysis, and applied machine learning for cryptographic technologies. She is also Acting Chief Researcher at TII's Autonomous Robotics Research Centre (ARRC).

Education

- **Ph.D. in applied cryptography and embedded systems security** from Princeton University, New York, USA

Publishing

Aaraj has written multiple conference papers, Institute of Electrical and Electronics Engineers (IEEE) and Association for Computing Machinery (ACM) journal papers and book chapters, and received patents on applied cryptography, embedded system security, and machine learning-based protection of Internet of Things (IoT) systems.

Solving systems of Boolean multivariate equations with quantum annealing. Accepted in Physical Review Journal

Machine Learning Assisted Security Analysis of 5G Network Connected Systems. Accepted in IEEE Transactions on Emerging Topics in Computing

An Efficient Dynamic Symmetric Searchable Encryption Scheme with Forward and Backward Privacy, accepted in Indocrypt 2021

S. Deshpande, S. del Pozo, V. Mateu, M. Manzano, N. Aaraj, and J. Szefer, "Modular Inverse for Integers using Fast Constant Time GCD Algorithm and its Applications", accepted in 30th International Conference on Field-Programmable Logic and Applications

T. Saha, N. Aaraj, and N. K. Jha, "SHARKS: Smart Hacking Approach for RisK Scanning in Internet-of-Things and Cyber-Physical Systems based on Machine Learning" in IEEE Transactions on Emerging Topics in Computing

D. Soni, K. Basu, M. Nabeel, N. Aaraj, M. Manzano, and R. Karri "Hardware Architectures for Post-Quantum Digital Signature Schemes" in Springer Nature

Career

Aaraj has more than 15 years of experience with global firms, working in multiple geographies from Australia to the United States. Prior to joining MBZUAI, Aaraj was Senior Vice President at DarkMatter, a cyber-security leader based in the UAE.

She was formerly at Booz & Company, where she led consulting engagements in the communication and technology industry for clients globally. She also held positions at IBM T.J. Watson Security Research in New York State, Intel in Portland, Oregon.

Aaraj is on the advisory board of New York-based NeuTigers, a leading-edge startup revolutionizing the next generation of energy/latency-efficient artificial intelligence (AI).

She is also a board member and adviser to multiple security and machine learning startups including Okinawa Graduate Institute of Science and Technology. She is a member of the Strategic Advisory Group of Paladin Capital Group based out of Washington DC.

She has also been appointed as the chairman of the UAE AI Expert Group, UAE Council for AI and Blockchain.

Mérouane Debbah

Adjunct Professor of Machine Learning
Chief Researcher at the Technology Innovation Institute (TII)

Research

Debbah's research lies at the interface of fundamental mathematics, algorithms, statistics, information, and communication sciences, with a special focus on the applications of random matrix theory and learning algorithms to communication sciences. In the wireless Communication field, he has been at the heart of the development of small cells (4G), Massive MIMO (5G) and Large Intelligent Surfaces (6G) technologies, for which he received multiple distinctions.

Education

- **Ph.D. in electrical engineering** from Ecole Normale Supérieure Paris-Saclay, France
- **Master of Science** from Ecole Normale Supérieure Paris-Saclay, France
- **Bachelor of Science** from the Ecole Normale Supérieure Paris-Saclay, France

Publishing

Debbah has received more than 20 best paper awards and edited many journals. His papers have received several awards, most recently the 2021 IEEE Marconi Prize Paper Award and the 2021 ERUASIP Best Paper Award.

Random matrix methods for wireless communications, R Couillet, M Debbah, Cambridge University Press, 2011

Massive MIMO in the UL/DL of cellular networks: How many antennas do we need? J Hoydis, S Ten Brink, M Debbah, IEEE Journal on selected Areas in Communications 31 (2), 160-171, 2013.

Coalitional game theory for communication networks, W Saad, Z Han, M Debbah, A Hjorungnes, T Basar, IEEE signal processing magazine 26 (5), 77-97

Living on the edge: The role of proactive caching in 5G wireless networks, E Bastug, M Bennis, M Debbah, IEEE Communications Magazine 52 (8), 82-89

J. Park, S. Samarakoon, M. Bennis and M. Debbah, "Wireless Network Intelligence at the Edge", Proceedings of the IEEE, Vol. 107, Issue: 11, Page(s): 2204-2239, November 2019.

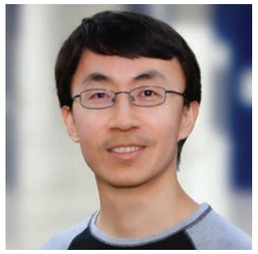
J. Park, S. Samarakoon, A. Elgabli, J. Kim, M. Bennis, S. Kim and M. Debbah, "Communication-Efficient and Distributed Learning Over Wireless Networks: Principles and Applications", Proceedings of the IEEE, Vol. 109, Issue: 5, Page(s): 796-819, 2021.

Career

Debbah was an assistant professor with the Mobile Communications Department, Institut Eurecom, Sophia Antipolis, France from 2003 to 2007. In 2007, he was appointed full professor at CentraleSupelec, Gif-sur-Yvette, France. From 2007 to 2014, he was the director of the Alcatel-Lucent Chair on Flexible Radio. From 2014 to 2021, he was vice-president of the Huawei France Research Center. He was jointly the director of the Mathematical and Algorithmic Sciences Lab as well as the director of the Lagrange Mathematical and Computing Research Center. Since 2021, he has led the AI and Digital Science Research centers at the Technology Innovation Institute (TII).

Debbah is an IEEE Fellow (2015), a WWRF Fellow (2008), a Eurasip Fellow (2021), an AAIA Fellow (2021), an Louis Bachelier Fellow (2021) and a SEE Membre émérite (2018).

He was a recipient of the ERC Grant MORE (Advanced Mathematical Tools for Complex Network Engineering) from 2012 to 2017, among other awards.



Pengtao Xie

Adjunct Assistant Professor
of Machine Learning

Research

Xie's research interests are machine learning inspired by humans' learning skills (especially classroom learning skills), such as learning by progressive examination, interleaving learning, small-group learning, learning by teaching, etc., and their applications in healthcare as well as natural language processing.

Education

- **Ph.D. in computer science** from Carnegie Mellon University, USA
- **Master's in computer science** from Tsinghua University, China

Publishing

Xie has authored or co-authored more than 130 research papers with more than 3500 citations.

Sai Somayajula and Pengtao Xie. A Multi-Level Optimization Framework for End-to-End Text Augmentation. Transactions of the Association for Computational Linguistics (TACL), 2021.

Jiayuan Huang, Yangkai Du, Shuting Tao, Kun Xu, and Pengtao Xie. Structured Pretraining for Commonsense Generation. Transactions of the Association for Computational Linguistics (TACL), 2021.

Xuefeng Du and Pengtao Xie. Performance-Aware Mutual Knowledge Distillation for Improving Neural Architecture Search. IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2022.

Meng Zhou, Zechen Li and Pengtao Xie. Self-supervised Regularization for Text Classification. Transactions of the Association for Computational Linguistics (TACL), 2021.

Youwei Liang, Chongjian Ge, Zhan Tong, Yibing Song, Jue Wang, and Pengtao Xie. EViT: Expediting Vision Transformers via Token Reorganizations. International Conference on Learning Representations (ICLR), 2022. (Spotlight Presentation)

Pengtao Xie, Wei Wu, Yichen Zhu, and Eric P. Xing. Orthogonality-Promoting Distance Metric Learning: Convex Relaxation and Theoretical Analysis. The 35th International Conference on Machine Learning (ICML), 2018. (Long Oral Presentation)

Career

Xie is an assistant professor at University of California (UC) San Diego. He served as an associate vice-president at Petuum Inc. He serves as area chair for ICML, CVPR, ICCV, NAACL, etc. His Ph.D. thesis was selected as a top-5 finalist for the AMIA Doctoral Dissertation Award. He is the recipient of the Amazon AWS Faculty Award, Tencent AI-Lab Faculty Award, Tencent WeChat Faculty Award, the Innovator Award presented by the *Pittsburgh Business Times*, the Siebel Scholars award. He has two granted patents and another seven under review.

Preslav Nakov

Professor
of Natural Language Processing
Acting Deputy Department Chair,
Natural Language Processing

Research

Nakov's research interests include computational linguistics and natural language processing, disinformation, propaganda, fake news and media bias detection, fact checking, machine translation, question answering, sentiment analysis, lexical semantics, and biomedical text processing.

Education

- **Ph.D. in computer science** from the University of California, USA (Fulbright scholarship and UC Berkeley fellowship)
- **Diploma (M.Sc. and B.Sc.) in informatics** from Sofia University (St Kliment Ohridski), Bulgaria

Publishing

Nakov has published more than 250 research papers in top-tier conferences and journals, and he was named among the top 2% of the world's most-cited researchers in the career achievement category, part of a global list by Stanford University.

FANG: Leveraging Social Context for Fake News Detection Using Graph Representation. Van-Hoang Nguyen, Kazunari Sugiyama, Preslav Nakov, Min-Yen Kan. Communications of the ACM (Research Highlights) 65 (4), 124-132, 2022 – CACM journal (best paper award at CIKM'2020)

Detecting Propaganda Techniques in Memes. Dimitar Dimitrov, Bishr Bin Ali, Shaden Shaar, Firoj Alam, Fabrizio Silvestri, Hamed Firooz, Preslav Nakov, Giovanni Da San Martino. Proceedings of the 59th Annual Meeting of the Association for Computational Linguistics and the 11th International Joint Conference on Natural Language Processing, pp. 6602-6617 – ACL-IJCNLP'2021

A Neighbourhood Framework for Resource-Lean Content Flagging. Sheikh Muhammad Sarwar, Dimitrina Zlatkova, Momchil Hardalov, Yoan Dinkov, Isabelle Augenstein, Preslav Nakov. Transactions of the Association for Computational Linguistics, 10:484-502 – TACL journal Shady Shehata, Fakhri Karray, Mohamed Kamel, "An Efficient Concept-based Retrieval Model For Enhancing Search Engine Quality", Knowledge and Information Systems Journal (KAIS), Springer, 2013

RuleBert: Teaching Soft Rules to Pre-trained Language Models. Mohammed Saeed, Naser Ahmadi, Preslav Nakov, Paolo Papotti. Proceedings of the 2021 Conference on Empirical Methods in Natural Language Processing, pp.1460-1476 – EMNLP'2021 A Neighbo

We Can Explain Your Research in Layman's Terms: Towards Automating Science Journalism at Scale. Rumen Dangovski, Michelle Shen, Dawson Byrd, Li Jing, Desislava Tsvetkova, Preslav Nakov, Marin Soljacic. 35(14), 12728-12737 – AAAI'2021

Semantic Relations Between Nominals. Vivi Nastase, Stan Szpakowicz, Preslav Nakov, Diarmuid Ó Séaghdha. Synthesis Lectures on Human Language Technologies, Morgan & Claypool Publishers 2021, pp. 1-234 – book

Career

Prior to joining MBZUAI, Nakov worked at the Qatar Computing Research, HBKU where he was a principal scientist. Previously, he was a research fellow at the National University of Singapore (2008–2011) and a researcher at the Bulgarian Academy of Sciences (2008). He has been an honorary lecturer at Sofia University, Bulgaria since 2014.

Nakov authored a Morgan and Claypool book titled *Semantic Relations Between Nominals* (2nd edition in 2021) and two books on computer algorithms. He was also the first to receive the Bulgarian President's John Atanasoff award, named after the inventor of the first automatic electronic digital computer.

Nakov is one of the leading experts on "fake news", disinformation, fact checking, propaganda, and media bias detection and has published tens of research papers on solutions and stop-gaps for the ever-growing online social media infodemic.

He's served on the program committees of the major conferences in computational linguistics and artificial intelligence. Most recently, he was a program committee chair of the annual conference of the Association for Computational Linguistics (ACL 2022). His research has been featured in more than 100 news outlets, including *MIT Technology Review, Communications of the ACM (Research Highlights), Forbes, Boston Globe, Science Daily, Popular Science, Fast Company, The Register, WIRED*, and *Engadget.*

Hanan Al Darmaki

Assistant Professor
of Natural Language Processing

Research

Al Darmaki's works on natural language processing (NLP) and automatic speech recognition (ASR) for low-resource languages. The methods she explores include unsupervised learning, transfer learning, and distant supervision to adapt NLP and ASR models to languages and dialects for which labeled data are scarce or non-existent. This includes studying the regularities in text and speech patterns to discover and map terms across languages or modalities, such as unsupervised dictionary induction, cross-lingual embeddings of speech and text, and unsupervised speech-to-text mapping.

Education

- **Ph.D. in computer science** from The George Washington University, USA
- **Master of Philosophy in computer speech, text, and internet technology (CSTIT)** from University of Cambridge, UK
- **Bachelor of Science in computer engineering** from American University of Sharjah, UAE

Publishing

Al Darmaki's current research activities include natural language processing (NLP) and automatic speech recognition (ASR) for low-resource languages. In particular, she works on developing unsupervised methods to enable transfer learning to languages and dialects for which labeled data are scare or non-existent.

"Unsupervised Automatic Speech Recognition: A Review". Speech Communication, 2022 – Elsevier.

"Efficient Sentence Embedding using Discrete Cosine Transform". Proceedings of the 2019 Conference on Empirical Methods in Natural Language Processing (EMNLP).

"Scalable Cross-Lingual Transfer of Neural Sentence Embeddings". Proceedings of the Joint Conference on Lexical and Computational Semantics (*SEM), 2019.

"Context-Aware Cross-Lingual Mapping". Proceedings of the Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL), 2019.

"Evaluation of Unsupervised Compositional Representations". Proceedings of the 27th International Conference on Computational Linguistics (COLING), 2018. .

"Unsupervised Word Mapping Using Structural Similarities in Monolingual Embeddings". Transactions Of The Association For Computational Linguistics (TACL), 2018.

Career

Prior to joining MBZUAI, Al Darmaki was an assistant professor in the department of computer science and software engineering at UAE University (UAEU). While completing her Ph.D., she worked as a teaching assistant and lecturer at George Washington University as well as on research projects at Apple Inc. and Amazon Web Services as an intern. Before starting her Ph.D., she worked as a statistical analyst at the Statistics Center-Abu Dhabi (SCAD), and as a network engineer at Dubai Electricity and Water Authority.

Shady Shehata

Affiliated Associate Professor
of Natural Language Processing

Research

Shehata's current research pursues a multimodal approach to understanding English and Arabic languages with text analysis and speech recognition. It focuses on building an Arabic language model to be utilized in Arabic natural language processing (NLP) tasks such as sentiment analysis, named-entity recognition, and question answering. The Arabic language model will also be used at the different stages of Arabic speech recognition. The research is taken further to support unsupervised, self-training for using parallel processing.

Education

- **Ph.D. in machine learning and natural language understanding** from the University of Waterloo, Canada

Publishing

Shehata's research work in the areas of machine learning and artificial intelligence has been recognized and published in top conferences, journals, and patents including IEEE TKDE, Computational Intelligence, Springer KAIS, ACM KDD, IEEE ICDM, IEEE / WIC / ACM WI, Springer ADMA, and SDM.

Mahmoud M. Nasr, Md. Milon Islam, Shady Shehata, Fakhri Karray, Yuri Quintana, "Smart Healthcare in the Age of AI: Recent Advances, Challenges, and Future Prospects", IEEE Access 9: 145248-145270. 2021.

Gábor Kismihók, Catherine Zhao, Michaéla C. Schippers, Stefan T. Mol, Scott Harrison, Shady Shehata, "Translating the Concept of Goal Setting into Practice: What 'Else' Does It Require Than a Goal Setting Tool?" The International Conference on Computer Supported Education (CSEDU), 388-395, 2020.

Shady Shehata, "Early Intervention System for Student Success", Practitioner Track Proceedings of the 6th International Learning Analytics and Knowledge Conference (LAK16): 39-45, 2016.

Shady Shehata, Fakhri Karray, Mohamed Kamel, "An Efficient Concept-based Retrieval Model For Enhancing Search Engine Quality", Knowledge and Information Systems Journal (KAIS), Springer, 2013.

Shady Shehata, Fakhri Karray, Mohamed Kamel, "An Efficient Concept-based Mining Model for Enhancing Text Clustering", IEEE Transactions on Knowledge and Data Engineering (TKDE), 2010.

Shady Shehata, Fakhri Karray, Mohamed Kamel, "An Efficient Concept-based Mining Model for Enhancing Text Clustering", IEEE Transactions on Knowledge and Data Engineering (TKDE), 2010.

Career

Shady Shehata is the co-founder and CTO of the YOURIKA company. Out of 4000 competing companies worldwide, Shehata built a strong IP technology for personalized learning that allowed YOUIRKA to be the first and only Canadian company accepted in the Amazon Alexa Funds Competitive Program based on five due diligence interviews with Amazon AI teams. Amazon invested in YOURIKA and is a partner. Shehata built strong relationships with industry through 7-plus connections at Amazon, Microsoft, and Google.

Before joining MBZUAI, Shehata joined Desire2Learn (D2L), where he spent 10 years leading the research and development of machine learning and data mining algorithms in production.

Shehata led the data science and business intelligence teams at D2L and built a big-data platform to make impactful change in the culture and decision-making processes, enabling descriptive, predictive, and prescriptive analytics.

He is a member and a technical reviewer for Learning Analytics and Knowledge (LAK), IEEE Transactions on Cybernetics, ACM Transactions on Knowledge Discovery from Data (TKDD), IEEE Transactions on Knowledge and Data Engineering (TKDE), Data and Knowledge Engineering, Elsevier, IEEE Transactions on Systems, Man, and Cybernetics, Part B, IEEE Control Systems Society Conference Management System, and IBM Centers for Advanced Studies: CASCON Conference.

Mohamed bin Zayed
University of Artificial Intelligence
Masdar City
Abu Dhabi
United Arab Emirates

mbzuai.ac.ae