Abdullah-Al-Zubaer Imran

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Biography

Abdullah-Al-Zubaer Imran is an Assistant Professor in the Computer Science Department of the Stanley and Karen Pigman College of Engineering at the University of Kentucky. His research is primarily centered on artificial intelligence, computer vision, and medical imaging. He is particularly interested in developing advanced AI-powered imaging tools across the upstream and downstream phases. His recent focus has been on semi-supervised learning, multi-task learning, self-supervised learning, and generative AI for computer vision.

Dr. Imran worked as a Postdoctoral Scholar in the Radiological Sciences Laboratory at Stanford University. He obtained a PhD degree in Computer Science from the University of California, Los Angeles (UCLA), advised by Distinguished Professor Demetri Terzopoulos. He also received an MS degree in Computer Science from Delaware State University (DSU) and a BS degree in Computer Science and Engineering from the Rajshahi University of Engineering and Technology (RUET), Bangladesh.

During his PhD studies at UCLA, Dr. Imran worked at VoxelCloud, Inc., in Los Angeles, CA, Philips Corporate Research NA in Cambridge, MA, and Tencent Medical AI in Palo Alto, CA. Previously, he held Lecturer positions in Bangladesh at North South University, Ahsanullah University of Science & Technology, and Northern University Bangladesh.

Research Interests

Artificial Intelligence, Computer Vision, Medical Imaging, Biomedical Informatics

Education

University of California, Los Angeles (UCLA) **Los Angeles, CA, USA**
Ph.D. in Computer Science Jun 2020
Thesis title: *From fully-supervised, single-task to scarcely-supervised, multi-task deep learning for medical image analysis.*
Thesis advisor: Dr. Demetri Terzopoulos (Distinguished Professor and Chancellor's Professor of Computer Science).
Thesis committee: Professors Song-Chun Zhu, Guy Van den Broeck, and Kai-Wei Chang.

Delaware State University (DSU) **Dover, DE, USA**
M.S. in Computer Science Aug 2016
Thesis title: *Estimation of breast anatomical descriptors from mastectomy CT images.*
Thesis advisors: Dr. David Pokrajac (formerly Professor of Computer Science at DSU) and Dr. Predrag Bakic (formerly Professor of Radiology at the University of Pennsylvania).

Rajshahi University of Engineering & Technology (RUET) **Rajshahi, Bangladesh**
B.S. in Computer Science & Engineering Sep 2012
Thesis title: *Automatic extraction of road networks from high-resolution satellite images.*
Thesis Advisor: Dr. Boshir Ahmed (Professor of Computer Science & Engineering).
President Gold Medal Winner as the Top Graduating Candidate.

Positions

Primary:

University of Kentucky (UK) **Lexington, KY, USA**
Assistant Professor of Computer Science Aug 2022–present

Stanford Radiological Sciences Laboratory (RSL) **Stanford, CA, USA**
Postdoctoral Scholar Jul 2020–Jul 2022

UCLA Computer Science Department **Los Angeles, CA, USA**
Teaching Assistant Oct 2018–Jun 2020

UCLA Computer Graphics & Vision Laboratory **Los Angeles, CA, USA**
Graduate Student Researcher Sep 2017–Jun 2020

North South University **Dhaka, Bangladesh**
Lecturer of Electrical & Computer Engineering Jan 2017–Sep 2017

DSU Medical Imaging & Simulation Laboratory **Dover, DE, USA**
Research Assistant Aug 2014–Dec 2016

Ahsanulllah University of Science & Technology — **Dhaka, Bangladesh**
Lecturer of Computer Science & Engineering — Nov 2013–Jul 2014

Northern University Bangladesh — **Dhaka, Bangladesh**
Lecturer of Computer Science & Engineering — Sep 2012–Nov 2013

Secondary:

UCLA Computer Graphics & Vision Laboratory — **Los Angeles, CA, USA**
Visiting Scholar — Jun 2020–present

Tencent Medical AI — **Palo Alto, CA, USA**
Research Intern — Jun 2019–Dec 2019

Philips Research — **Cambridge, MA, USA**
Research & Development Intern — Jun 2018–Sep 2018

VoxelCloud, Inc. — **Los Angeles, CA, USA**
Visiting PhD Researcher — Sep 2017–Jun 2018

Awards and Honors

Ranked 3rd at the MICCAI Low Dose CT Image Quality (LDCTIQA) Challenge	2023
Ranked 6th at the MIDRC mRALE Mastermind Challenge	2023
UK College of Engineering Start-up Funding	2022–2025
CMBBE: Imaging & Visualization Best Paper Award for the 2019–2020 Biennium	2021
Stanford Bio-X Travel Award	2021
AAPM Expanding Horizons Travel Grant	2020
AAAI Student Travel Scholarship	2020
LabeX Primes Fellowship	2019
UCLA Graduate Division Fellowship	2017 – 2019
Nvidia Best Paper Award at MICCAI–DLMIA	2018
Machine Learning Summer School Travel Stipend	2018
NIH Research Fellowship at DSU	2014 – 2016
President Gold Medal as the Top Graduating Candidate at RUET	2014
Student of the Year Award at RUET	2009, 2011

Publications

Imran, A.-A.-Z., Wang, A., Pal, D., Wang, S., Zucker, E., Patel, B., "Patient anatomy and task specific automatic exposure control in computed tomography," *U.S. Patent No. 12,002,204,* 2024. [Omnibus patent]

Munia, N., **Imran, A.-A.-Z.**, "DermDiff: Generative diffusion model for mitigating racial biases in dermatology diagnosis," Paper accepted at *MICCAI Advancing Data Solutions in Medical Imaging AI (ADSMI)*, 2024.

Ahamed, M., McFarland, B., Wang, X., Chen, J., **Imran, A.-A.-Z.** "Automatic detection of breast cancer lumpectomy margin from intraoperative specimen mammography." *International Workshop on Breast Imaging (IWBI)*, Chicago, IL, USA, 2024. poster

Moseley, A., **Imran, A.-A.-Z.**, "PolyCL: Context-aware contrastive learning for image segmentation," *IEEE International Symposium on Biomedical Imaging (ISBI)*, Athens, Greece, 2024. poster

Medrano, M., Wang, S., **Imran, A.-A.-Z.**, Stevens, G., Tse, J., Wang, A., "Personalized, scout-based dose estimation for prospective optimization of CT tube current modulation," *SPIE Medical Imaging: Physics of Medical Imaging*, San Diego, CA, USA, 2024. oral

Wang, S., Medrano, M., **Imran, A.-A.-Z.**, Stevens, G., Tse, J., Wang, A., "Retrospective tube current modulation optimization of individualized organ-level CT dose and image quality," *SPIE Medical Imaging: Physics of Medical Imaging*, San Diego, CA, USA, 2024. oral

Medrano, M., **Imran, A.-A.-Z.**, Wang, S., Wang, A., "Organ-aware, scout-based approach for scout segmentation and prospective, personalized organ CT dose estimation," *109th Radiological Society of North America (RSNA): Scientific Assembly and Annual Meeting,* Chicago, IL, USA, 2023.

Haque, A., Wang, A. **Imran, A.-A.-Z.**, "Task-specific self-supervision for CT image denoising," *Journal Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization*, 2023.

Ahamed, M.A., Chen, J., **Imran, A.-A.-Z.**, "FFCL: Forward-Forward contrastive learning for improved medical image classification," *Medical Imaging with Deep Learning (MIDL)*, 2023. poster

Jiang, Y., Gupta, S., **Imran, A.-A.-Z.**, "Transforming radiology workflows: Pretraining for automated chest X-ray report generation," *Medical Imaging with Deep Learning (MIDL)*, 2023. poster

Imran, A.-A.-Z., Wang, S., Pal, D., Dutta, S., Zucker, E., Wang, A., "Multimodal contrastive learning for prospective personalized estimation of CT organ dose," *International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), Singapore, pp 634–643, 2022.* [Top 13%] poster

Ahamed, M., **Imran, A.-A.-Z.**, "Joint learning with local and global consistency for improved medical image segmentation," *Medical Image Understanding and Analysis (MIUA)*, Cambridge, UK, pp. 298–312, 2022. poster

Imran, A.-A.-Z., Pal, D., Wang, S., Dutta, S., Zucker, E., Wang, A., "Personalized CT organ noise estimation from scout images," *SPIE Medical Imaging: Physics of Medical Imaging*, 120310R, San Diego, CA, USA, 2022. oral

Jahan, H., **Imran, A.-A.-Z.**, "LightSeg: Efficient yet effective medical image segmentation," *IEEE International Symposium on Biomedical Imaging (ISBI)*, Kolkata, India, pp. 1–4, 2022. oral

Jahan, H., **Imran, A.-A.-Z.**, "Pay attention for COVID-19 detection with efficient convolution," *IEEE International Symposium on Biomedical Imaging (ISBI)*, Kolkata, India, 2022. poster

Haque, A., Wang, A., **Imran, A.-A.-Z.**, "Noise2Quality: Non-reference, pixel-wise assessment of low-dose CT images," *SPIE Medical Imaging: Image Perception, Observer Performance, and Technology Assessment*, 120351, San Diego, CA, USA, 2022. poster

Shabanian, M., **Imran, A.-A.-Z.**, Siddiqui, A., Davis, R., Bissler, J., "3D deep neural network to automatically identify TSC structural brain pathology based on MRI," *SPIE Medical Imaging: Image Processing*, 12032, San Diego, CA, USA, 2022. poster

Purpura-Pontoniere, A., **Imran, A.-A.-Z.**, Bhattacharya, T., "Efficient ATR using contrastive learning," *SPIE Defense: Automatic Target Recognition*, 120960H, Orlando, FL, USA, 2022. oral

Imran, A.-A.-Z., Wang, S., Pal, D., Dutta, S., Patel, B., Zucker, E., Wang, A., "Personalized CT organ dose estimation from scout images," *International Conference on Medical Image Computing & Computer Assisted Intervention (MICCAI)*, Strasbourg, France, pp. 488–498, 2021. [Top 13%] poster

Imran, A.-A.-Z., Haque, A., Wang, A., Terzopoulos, D., "Generalized multi-task learning from substantially unlabeled multi-source medical image data," *Journal Machine Learning for Biomedical Imaging (MELBA)*, **2021**:011, 1–25, 2021.

Sandino, C.M., Cole, E., Alkan, C., Chaudhari, A., Loening, A., Hyun, D., Dahl, J., **Imran, A.-A.-Z.**, Wang, A., Vasanawala, S. "Upstream machine learning in radiology," *Journal Radiologic Clinics of North America (RCNA): Artificial Intelligence in Radiology*, **59**:6, 967–985, 2021.

Haque, A., Wang, A., **Imran, A.-A.-Z.**, "Window-level is a strong denoising surrogate," *MICCAI Machine Learning in Medical Imaging (MLMI)*, Strasbourg, France, pp. 457–466, 2021. poster

Imran, A.-A.-Z., Pal, Debashish, Patel, Bhavik, Wang, A., "SSIQA: Multi-task learning for non-reference CT image quality assessment with self-supervised noise level prediction," *IEEE International Symposium on Biomedical Imaging (ISBI)*, Nice, France, 1962-1965, 2021. poster

Imran, A.-A.-Z., Wang, S., Pal, D., Dutta, S., Patel, B., Zucker, E., Wang, A., "Real-time, personalized estimation of CT organ dose from scout images," *107th* Radiological Society of North America (RSNA): Scientific Assembly and Annual Meeting, 2021. oral

Imran, A.-A.-Z., Haque, A., Wang, A., Terzopoulos, D., "MultiMix: Sparingly supervised extreme multitask learning from medical images," *IEEE International Symposium on Biomedical Imaging (ISBI)*, Nice, France, pp. 693–696, 2021. poster

Wang, S., **Imran, A.-A.-Z.**, Pal, D., Zucker, E. Wang, A., "Fast Monte Carlo simulation of non-isotropic X-ray source for CT dose calculation," *American Association of Physicists in Medicine (AAPM) Annual Meeting*, 2021. oral

Imran, A.-A.-Z., Terzopoulos, D., "Multi-adversarial variational autoencoder nets for simultaneous image generation and classification," *Deep Learning Applications, Volume 2*, Springer, pp. 249–271, 2021.

Imran, A.-A.-Z., Terzopoulos, D., "Progressive adversarial semantic segmentation," *International Conference on Pattern Recognition (ICPR 2020)*, Milan, Italy, pp. 4910-4917, 2021. poster

Imran, A.-A.-Z., Huang, C., Tang, H., Fan, W., Xiao, Y., Hao, D., Qian, Z., Terzopoulos, D., "Partly supervised multitask learning," *International Conference on Machine Learning & Applications (ICMLA)*, Miami, FL, USA, pp. 769-774, 2020. oral

Imran, A.-A.-Z., Huang, C., Tang, H., Fan, W., Cheung, K., To, M., Qian, Z., Terzopoulos, D., "Fully-automated analysis of scoliosis from spinal X-ray images," 33^{rd} *IEEE Symposium on Computer Based Medical Systems (CBMS)*, Rochester, MN, USA, pp. 114–119, 2020. oral

Imran, A.-A.-Z., "From fully-supervised, single-task to scarcely-supervised, multi-task deep learning for medical image analysis," *Doctoral Dissertation*, University of California, Los Angeles, CA, USA, 2020.

Imran, A.-A.-Z., Huang, C., Tang, H., Fan, W., Xiao, Y., Hao, D., Qian, Z., Terzopoulos, D., "Self-supervised, semi-supervised, multi-context learning for the combined classification and segmentation of medical images," *Proc. AAAI Conference on Artificial Intelligence*, New York, NY, USA, **34**(10): 13815–13816, 2020. poster

Imran, A.-A.-Z., Hatamizadeh, A., Ananth, S., Ding, X., Tajbakhsh, N., Terzopoulos, D., "Fast and automatic segmentation of pulmonary lobes from chest CT using a progressive dense V-network," *Journal Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization*, **8**:5, 509-518, 2020.
[Best Paper Award for the 2019-2020 biennium] [Cover Article]

Imran, A.-A.-Z., Terzopoulos, D., "Multi-adversarial variational autoencoder networks," 18^{th} *IEEE International Conference on Machine Learning And Applications (ICMLA)*, Boca Raton, FL, USA, pp. 777–782, 2019. oral

Imran, A.-A.-Z., Huang, C., Tang, H., Fan, W., Cheung, K., To, M., Qian, Z., Terzopoulos, D., "End-to-End fully automatic segmentation of scoliotic vertebrae from spinal X-ray images," *Medical Imaging Meets NeurIPS*, Vancouver, BC, Canada, Dec 2019. poster

Imran, A.-A.-Z., Huang, C., Tang, H., Fan, W., Cheung, K., To, M., Qian, Z., Terzopoulos, D., "Bipartite distance for shape-aware landmark detection in spinal X-rays," *Medical Imaging Meets NeurIPS*, Vancouver, BC, Canada, Dec 2019. poster

Imran, A.-A.-Z., Terzopoulos, D., "Semi-supervised multi-task learning with chest X-ray images," *MICCAI Machine Learning in Medical Imaging (MLMI)*, Shenzhen, China, **11861**: 151–159, 2019. poster

Imran, A.-A.-Z., Bakic, P.R., Pokrajac, D.D., "Characterization of adipose compartments in mastectomy CT images," *SPIE Medical Imaging: Physics of Medical Imaging*, Houston, TX, USA, **1057356**: 1315–1324, 2018. poster

Imran, A.-A.-Z., Hatamizadeh, A., Ananth, S., Ding, X., Tajbakhsh, N., Terzopoulos, D., "Automatic segmentation of pulmonary lobes using a progressive dense V-network," *MICCAI Deep Learning in Medical Image Analysis (DLMIA)*, Granada, Spain, **11045**: 282–290, 2018. oral [Nvidia Best Paper Award]

Pokrajac, D.D., Radovanovic, Z., Milosavljevic, T., Stokanovic, V., Weinstein, S., **Imran, A.-A.-Z.**, Maidment, A.D.A., Bakic, P.R., "Selection of parameters for computer model of breast anatomy through human observer experiments," *Insights Imaging: European Congress of Radiology (ECR)*, Vienna, Austria, 2018. oral

Imran, A.-A.-Z., Bakic, P.R., Maidment, A.D.A., Pokrajac, D.D., "Optimization of the simulation parameters for improving realism in anthropomorphic breast phantoms," *SPIE Medical Imaging: Physics of Medical Imaging*, Orlando, FL, USA, **1013257**: 1329–1335, 2017. poster

Kuperavage, A., **Imran, A.-A.-Z.**, Bakic, P.R., Maidment, A.D.A., Pokrajac, D.D., "Validation of Cooper's ligaments thickness in software phantoms," *SPIE Medical Imaging: Physics of Medical Imaging*, Orlando, FL, USA, **101325B**: 1365–1372, 2017. poster

Imran, A.-A.-Z., "Estimation of breast anatomical descriptors from mastectomy CT images," *Masters Thesis*, Delaware State University, Dover, DE, USA, 2016.

Imran, A.-A.-Z., Bakic, P.R., Maidment, A.D.A., Pokrajac, D.D., "Estimation of adipose compartment volumes in CT images of a mastectomy specimen," *SPIE Medical Imaging: Physics of Medical Imaging*, San Diego, CA, USA, **97832O**: 671–679, 2016. poster

Cockmartin, L., Bosmans, H., Bliznakova, K., Pokrajac, D.D., **Imran, A.-A.-Z.**, Marshall, N., Maidment, A.D.A., Bakic, P.R., "Creation of realistic structured backgrounds using adipose compartment models in a test object for breast imaging performance analysis," 102^{nd} *Radiological Society of North America (RSNA): Scientific Assembly and Annual Meeting*, Chicago, IL, USA, 2016. poster

Imran, A.-A.-Z., Pokrajac, D.D., Bakic, P.R., "Spatial distribution of adipose compartment size, shape and orientation in CT breast Images of a mastectomy specimen," *IEEE Signal Processing in Medicine and Biology (SPMB)*, Philadelphia, PA, USA, 1–2, 2015. poster

Pokrajac, D.D., **Imran, A.-A.-Z.**, Bakic, P.R., "Monte Carlo testing and verifications of numerical algorithm implementations," *12th International Conference on Telecommunication in Modern Satellite, Cable and Broadcasting Services (TELSIKS)*, Nis, Serbia, 56–59, 2015. oral

Research Funding

- *Reliable Generative Medical AI with Conditional Noise and Anatomy Guidance*
  PI: **Abdullah-Al-Zubaer Imran**
  Sponsor: UNITE–Research Priority Area, University of Kentucky
  Total award: $49,716
  Duration: 2024–2025

◇ Climate Resilience through Multidisciplinary Big Data Learning, Prediction & Building Response Systems (CLIMBS)
PI: Rodney Andrews
Co-PI/Co-I(s): Edward Woolery, Czarena Crofcheck, Lindsey Bryson, Michael McGlue, **Abdullah-Al-Zubaer Imran**, and many others
Sponsor/Program: NSF EPSCoR RII–Track 1
Amount: $20,000,000
Duration: 2024–2029

- *Det-a-Air: Object-Level Generative AI for Enhanced Aircraft Inspection*
  PI: **Abdullah-Al-Zubaer Imran**
  Sponsor: Boeing Project Program, University of Kentucky
  Total award: $9,000
  Duration: 2024–2025

- *Generative Dermatology AI for Bias-Free Diagnosis*
  PI: **Abdullah-Al-Zubaer Imran**
  Sponsor: UNITE–Research Priority Area, University of Kentucky
  Total award: $49,265
  Duration: 2023–2024

- *Privacy Preserving Protest Dynamics*
  PI: **Abdullah-Al-Zubaer Imran**
  Co-PI(s)/Co-I(s): Nazmus Sakib, Samson Cheung
  Sponsor: Igniting Research Collaborations, University of Kentucky
  Total award: $29,990
  Duration: 2023–2023

- *CT Acquisition Technique for Radiation Dose and Image Quality Optimization of Pediatric Examinations*
  PI: **Abdullah-Al-Zubaer Imran**
  Co-PI(s)/Co-I(s): Jie Zhang
  Sponsor: Igniting Research Collaborations, University of Kentucky
  Total award: $31,990
  Duration: 2023–2023

- *Self-supervised CT image segmentation*
  PI: **Abdullah-Al-Zubaer Imran**
  Sponsor: UK College of Engineering
  Total award: $2500 (matched $1250 from PI)
  Duration: 2023–2023

- *AI-based Workflow for Improved Medical Imaging*
  PI: **Abdullah-Al-Zubaer Imran**
  Sponsor: UK College of Engineering
  Total award: $373,000
  Duration: 2022–2025

Reviewing

American Association of Physicists in Medicine Annual Meeting (AAPM)

Computer Vision and Pattern Recognition (CVPR)

Deep Learning for Computer Vision (DLCV)

European Conference on Computer Vision (ECCV)

IEEE Access

IEEE International Symposium on Biomedical Imaging (ISBI)
IEEE International Symposium on Computer-Based Medical Systems (CBMS)
IEEE Journal of Biomedical and Health Informatics (JBHI)
IEEE Journal of Translational Engineering in Health and Medicine (JTEHM)
IEEE Transactions on Artificial Intelligence (TAI)
IEEE Transactions on Medical Imaging (TMI)
International Conference on Computer Vision (ICCV)
International Conference on Learning Representations (ICLR)
Knowledge-Based Systems (KBS)
Machine Learning for Health (ML4H)
Medical Image Computing & Computer Assisted Intervention (MICCAI)
Medical Imaging and Computer-Aided Diagnosis (MICAD)
Medical Physics Journal
Neural Information Processing Systems (NeurIPS)
Patterns–Cell Press

Teaching

UK Computer Science Department	**Instructor**
CS 460G: Machine Learning	Spring 2024
CS 335: Graphics and Multimedia	Fall 2023
CS 585/684/685: Advanced Computational Methods for Biomedical Imaging	Spring 2023, Fall 2024
UCLA Computer Science Department	**Teaching Assistant**
Computational Methods for Medical Imaging	Spring 2020
C++ Programming	Fall 2018, Winter 2019, Spring 2019
North South University	**Instructor**
Data Structures & Algorithms	Spring 2017
Discrete Mathematics	Spring 2017, Summer 2017
Theory of Computation	Spring 2017, Summer 2017
Programming Language I	Spring 2017, Summer 2017
Management of Information Systems	Summer 2017
Ahsanullah University of Science & Technology	**Instructor**
Data Structures	Fall 2013
Information Systems Design & Software Engineering	Fall 2013
Microprocessor-based Systems Design	Fall 2013
Computer Networking	Summer 2014
Computer Fundamentals	Summer 2014
Northern University Bangladesh	**Instructor**
Statistics & Queuing Theory	Fall 2012
Theory of Computation	Fall 2012
Numerical Methods	Spring 2013, Summer 2013
Neural Networks	Spring 2013
Compilers Design	Spring 2013

Research Mentoring

Current Students:

- Kazi Ramisa Rifa (PhD, CS, UK)
- Tyler Ward (PhD, CS, UK)
- Nusrat Munia (PhD, CS, UK)
- Milin Shah (Undergrad, CS, UK)
- Mustafa Albaree (Undergrad, CS, UK)
- Anthony Zhang (K-12, Paul Laurence Dunbar High School)

Past Students:

- Cohen Archbold (PhD, CS, UK)
- Seif Naqvi (K-12, Paul Laurence Dunbar High School)
- Aaron Moseley (Undergrad, CS, UK)
- Daniel Song (MS, CS, UK)
- Samantha Kelly (Undergrad, BME, UK)
- Isabel Berny (BS, CS, Stanford)
- Ayaan Haque (K-12, Saratoga High School)
- Attiano Purpura-Pontoniere (MS, CS, UCLA)
- Husne Jahan (AI Engineer)
- Steffen Jung (PhD, Max Planck Institute for Informatics)
- Mahdieh Shabanian (MS, BME, UTHSC)

Graduate Student Committee Service

- Member, Halil Ismail Helvaci, PhD in progress, EE, UK
- Member, Ankan Bhattacharyya, PhD in progress, CS, UK
- Member, Usman Hassan, PhD in progress, EE, UK
- Co-Chair, Cohen Archbold, PhD in progress, CS, UK
- Member, Clifford Parker, PhD, CS, UK, 2024
  "Flexible attenuation fields: Tomographic reconstruction from heterogeneous datasets."
- Member, Ethan Coots, MS, CS, UK, 2024
  "Tractor front-end loader image classification using CNNs."

Activity

Senior Program Committee, AAAI 2023–2025

Review panel, DOE Advancements in Artificial Intelligence for Science

Proposal Reviewer, UK Neuroscience Research Priority Area

Associate Editor, Journal of Medical Physics

Member, UK Center for Clinical and Translational Science (CCTS)

Member, The United in True Racial Equity (UNITE)–Research Priority Area at UK

Member, UK Computer Science Committee on Higher Degrees

Faculty Advisor, UK Bangladesh Student Association 2022–2024

Review Editor, Frontiers in Radiology: AI in Radiology

Council Member, RSL Trainee Council, Stanford Medicine

RSL Seminar Coordinator, Stanford Medicine

Mentor, NeurIPS DistShift 2021 mentorship program

Reviewer, 2021 AAPM EHTG Award

Reviewer, 2020 UCLA Engineering Scholarship

Program committee, International Conference on Artificial Intelligence for Healthcare (AI4HC) 2020

Society Memberships: AAPM, AAAI, MICCAI, IEEE EMBS

Talks

Task-aware self-supervised learning for CT imaging
Invited talk at the University of Louisville — Apr 2023

Self-supervised learning for effective upstream and downstream medical imaging
AI Seminar Series, Keck Data Science Institute at Pepperdine University — Apr 2023

Self-supervised learning in medical imaging: effectiveness & relatedness
UK Computer Science Keeping Current Seminar — Mar 2023

On effectiveness of upstream and downstream AI for medical imaging
Janssen R&D — Jun 2022

Effective upstream and downstream AI for medical imaging
University of Colorado Anschutz — May 2022

Domain generalization without domain-specific data for medical image segmentation
Siemens Healthineers — May 2022

Effective upstream and downstream AI for medical imaging
University of Nebraska–Lincoln — Feb 2022

Effective upstream and downstream AI for medical imaging
Drexel University — Feb 2022

Effective upstream and downstream AI for medical imaging
University of Alabama at Birmingham — Feb 2022

Effective upstream and downstream AI for medical imaging
Saint Louis University — Jan 2022

Effective AI for medical imaging: upstream and downstream
University of Kentucky — Jan 2022

On effectiveness of upstream and downstream AI for medical imaging
Florida International University — Dec 2021

Upstream AI for CT image acquisition
RSL seminar at Stanford — Jun 2021

Effective Deep Learning in Medical Imaging
Guest Lecture to the Advanced Data Mining class at Utah State University — Feb 2021

Effective Deep Learning from Limited Labeled Medical Image Data
Guest Lecture to the Deep Learning class at New Mexico State University — Oct 2020

Self-supervised learning in medical imaging
Joint group meeting at Stanford — Sep 2020

Emerging biomedical imaging technologies
Webinar keynote at RUET — Sep 2020

Fully-automated analysis of scoliosis from spinal X-Ray images
IEEE CBMS 2020 — Jul 2020

Data efficient AI for medical imaging
AI for Healthcare (AI4HC) 2020 — Jun 2020

Multi-adversarial variational autoencoder networks
IEEE ICMLA 2019, Boca Raton, FL — Dec 2019

Automatic segmentation of pulmonary lobes using a progressive dense V-network
MICCAI DLMIA 2018, Granada, Spain — Sep 2018

Finite automaton: DFA and NFA
Open lecture at California State Polytechnic University, Pomona, CA — Nov 2016

Monte Carlo testing and verification of numerical algorithm implementations
IEEE TELSIKS 2015, Nis, Serbia — Oct 2015

Computational complexity: NP completeness
Guest lecture in the Department of Computer & Information Sciences, DSU, Dover, DE — May 2015

Diagnosis of brain tumor using MRI scan incorporated adaptive neuro-fuzzy inference system
42nd Annual honors day presentation, DSU, Dover, DE — Apr 2015

Media Coverage

UNITE Pilot Grant — 2023
UNITE Pilot Awardees

Featured STEM PhD — 2020
DiscoverPhDs Interview

MICCAI Daily — 2019
RSIP Vision Magazine News

Nvidia Best Paper Award at MICCAI–DLMIA — 2018
UCLA Computer Science News