Md Yousuf Harun

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Education

Rochester Institute of Technology Rochester, NY
PH.D. IN IMAGING SCIENCE Aug. 2020 – Present
• **Thesis**: Towards Efficient Continual Deep Learning
• **Advisor**: Dr. Christopher Kanan
• **Highlights**: 7+ first-author publications on robust and efficient deep learning systems
• **Anticipated Graduation Date**: May 2026

University of Hawaii at Manoa Honolulu, HI
M.S. IN ELECTRICAL ENGINEERING Aug. 2018 – May 2020
• **Thesis**: Medical Image Segmentation using Deep Learning
• **Advisors**: Dr. Aaron Ohta and Dr. Il Yong Chun
• **Highlights**: 4 publications on deep learning for medical image segmentation

Khulna University of Engineering & Technology Khulna, Bangladesh
B.S. IN ELECTRICAL & ELECTRONIC ENGINEERING Feb. 2012 – May 2016

Experience

Rochester Institute of Technology Rochester, NY
GRADUATE RESEARCH ASSISTANT May 2021 – Present
● Developed efficient continual deep learning algorithms for real-world applications.
Mentored by Dr. Christopher Kanan.

University of Hawaii at Manoa Honolulu, HI
GRADUATE RESEARCH ASSISTANT Aug. 2019 – May 2020
● Researched medical image segmentation using deep learning under the supervision
of Dr. Aaron Ohta.
● Researched magnetic resonance imaging (MRI) image reconstruction under the supervision of Dr. Il Yong Chun.
● Developed AI-based software for segmenting human blastocyst cells to assist doctors
at Pacific IVF Institute, Hawaii.

Dutch-Bangla Bank Limited Dhaka, Bangladesh
ENGINEER May 2017 – Oct. 2017
● Supervised the installation and maintenance of electrical substations & data centers.

Best Poster or Abstract Award

1. **M.Y. Harun**, J. Gallardo, and C. Kanan. Prioritized Training on Rehearsal Samples for Efficient Online Continual Learning. *In: IEEE Western NY Image and Signal Processing Workshop (**WNYISPW**)*, 2023 Link

Peer-Reviewed Publications

[∗ denotes equal contribution]

1. **M.Y. Harun**, J. Gallardo, and C. Kanan. Controlling Neural Collapse Enhances Out-of-Distribution Detection and Transfer Learning. *In: International Conference on Machine Learning (**ICML**)*, 2025 [26.9% accept rate] Link

2. **M.Y. Harun** and C. Kanan. A Good Start Matters: Enhancing Continual Learning with Data-Driven Weight Initialization. *In: Conference on Lifelong Learning Agents (**CoLLAs**)*, 2025 Link

3. S. Srivastava, **M.Y. Harun**, R. Shrestha, and C. Kanan. Improving Multimodal Large Language Models Using Continual Learning. *In: Conference on Lifelong Learning Agents (**CoLLAs**)*, 2025 Link

4. **M.Y. Harun**∗, K. Lee∗, J. Gallardo, G. Krishnan, and C. Kanan. What Variables Affect Out-of-Distribution Generalization in Pretrained Models? *In: Neural Information Processing Systems (**NeurIPS**)*, 2024 [25.8% accept rate] [Link](#)

5. **M.Y. Harun**, J. Gallardo, J. Chen, and C. Kanan. GRASP: A Rehearsal Policy for Efficient Online Continual Learning. *In: Conference on Lifelong Learning Agents (**CoLLAs**)*, 2024 [Link](#)

6. **M.Y. Harun** and C. Kanan. Overcoming the Stability Gap in Continual Learning. *In: Transactions on Machine Learning Research (**TMLR**)*, 2024 [Link](#)

7. **M.Y. Harun**∗, J. Gallardo∗, T.L. Hayes, R. Kemker, and C. Kanan. SIESTA: Efficient Online Continual Learning with Sleep. *In: Transactions on Machine Learning Research (**TMLR**)*, 2023 [CoLLAs-2024 Event Certified] [Link](#)

8. **M.Y. Harun**, J. Gallardo, T.L. Hayes, and C. Kanan. How Efficient Are Today's Continual Learning Algorithms? *In: CVPR Workshop on Continual Learning in Computer Vision (**CLVISION**)*, 2023 [Link](#)

9. **M.Y. Harun**, M.A. Rahman, J. Mellinger, W. Chang, T. Huang, B. Walker, K. Hori, and A. Ohta. Image Segmentation of Zona-Ablated Human Blastocysts. *In: IEEE International Conference on Nano/Molecular Medicine and Engineering (**NANOMED**)*, 2019 [Link](#)

10. **M.Y. Harun**, T. Huang, and A. Ohta. Inner Cell Mass and Trophectoderm Segmentation in Human Blastocyst Images using Deep Neural Network. *In: IEEE International Conference on Nano/Molecular Medicine and Engineering (**NANOMED**)*, 2019 [Link](#)

11. T.T. Huang, T. Kosasa, B. Walker, C. Arnett, C.T. Huang, C. Yin, **M.Y. Harun**, H.J. Ahn, and A. Ohta. Deep Learning Neural Network Analysis of Human Blastocyst Analysis from Time-lapse Image Files. *In: Reproductive BioMedicine Online (**RBMO**)*, 2021 [Link](#)

12. T. Huang, B. Walker, **M.Y. Harun**, M.A. Rahman, J. Mellinger, W. Chang, and A. Ohta. Automated Computer Analysis of Human Blastocyst Expansion from Embryoscope Time-Lapse Image Files. *In: American Society for Reproductive Medicine (**ASRM**)*, 2019 [Link](#)

Peer-Reviewed Abstracts & Posters

[Non-archival, ∗ denotes equal contribution]

1. **M.Y. Harun**∗, K. Lee∗, J. Gallardo, G. Krishnan, and C. Kanan. What Variables Affect Out-of-Distribution Generalization in Pretrained Models? *In: ICML Workshop on Unifying Data Curation Frameworks Across Domains (**DataWorld**),* 2025

2. **M.Y. Harun**∗, K. Lee∗, J. Gallardo, G. Krishnan, and C. Kanan. What Variables Affect Out-of-Distribution Generalization in Pretrained Models? *In: CVPR Workshop on Domain Generalization: Evolution, Breakthroughs, and Future Horizon (**DG-EBF**),* 2025

3. **M.Y. Harun**∗, K. Lee∗, J. Gallardo, G. Krishnan, and C. Kanan. Disentangling the Causes of the Tunnel Effect in Deep Neural Networks. *In: IEEE Western NY Image and Signal Processing Workshop (**WNYISPW**)*, 2024 **(Oral)**

4. **M.Y. Harun** and C. Kanan. Towards Stable Continual Learning Under Distribution Shifts. *In: IEEE Western NY Image and Signal Processing Workshop (**WNYISPW**)*, 2024 **(Oral)**

5. S. Srivastava, **M.Y. Harun**, R. Shrestha, and C. Kanan. Improving Multimodal LLMs Using Continual Learning. *In: IEEE Western NY Image and Signal Processing Workshop (**WNYISPW**)*, 2024 **(Oral)**

6. **M.Y. Harun**∗, K. Lee∗, J. Gallardo, G. Krishnan, and C. Kanan. What Variables Affect Out-of-Distribution Generalization in Pretrained Models? *In: 15th Annual Machine Learning Symposium, NY Academy of Sciences (**NYAS**),* 2024

7. S. Srivastava, **M.Y. Harun**, R. Shrestha, and C. Kanan. Improving Multimodal Large Language Models Using Continual Learning. *In: NeurIPS Workshop on Scalable Continual Learning for Lifelong Foundation Models (**Continual FoMo**)*, 2024 [Link](#)

8. **M.Y. Harun**∗, J. Gallardo∗, T.L. Hayes, R. Kemker, and C. Kanan. SIESTA: Efficient Online Continual Learning with Sleep. *In: International Sleep Replay Workshop*, 2024

9. **M.Y. Harun**, J. Gallardo, J. Chen, and C. Kanan. GRASP: A Rehearsal Policy for Efficient Online Continual Learning. *In: International Sleep Replay Workshop*, 2024

10. **M.Y. Harun**, J. Gallardo, and C. Kanan. Prioritized Training on Rehearsal Samples for Efficient Online Continual Learning. *In: IEEE Western NY Image and Signal Processing Workshop (**WNYISPW**)*, 2023 **(Oral)**

Dissertation

- Medical Image Segmentation for Embryo Image Analysis. Master's Dissertation, University of Hawaii at Manoa, 2020 Link

Awards & Scholarships

- TRAVEL GRANT: IEEE International Conference on Nano/Molecular Medicine and Engineering (NANOMED), 2019
- RESEARCH EXCELLENCE AWARD: University of Hawaii at Manoa, 2020
- TEACHING EXCELLENCE AWARD: University of Hawaii at Manoa, 2019
- TRAVEL GRANT: Bangladesh Sweden Trust Fund, 2018
- SCHOLARSHIP: Bangladesh Government Merit Scholarship in Higher Secondary Certificate Examination, 2011
- SCHOLARSHIP: Bangladesh Government Merit Scholarship in Secondary School Certificate Examination, 2009

Invited Talk

- Towards Efficient Continual Learning in Deep Neural Networks. *RIT Center for Human-aware Artificial Intelligence (CHAI) Seminar Series*, 2023

Teaching Experience

- TEACHING ASSISTANT: Undergraduate Course – Fourier Method for Imaging (RIT), Duration: Jan. 2021 – May 2021
- TEACHING ASSISTANT: Undergraduate Course – Imaging Science Fundamentals (RIT), Duration: Aug. 2020 – Dec. 2020
- TEACHING ASSISTANT: Undergraduate Course - C Programming Language (UHM), Duration: Aug. 2019 – Dec. 2019
- MENTOR: Native Hawaiian Science and Engineering Mentorship Program, UHM, May 2019 – Aug. 2019
- TEACHING ASSISTANT: Undergraduate Course - Basic Circuit Lab (UHM), Duration: Jan. 2019 – May 2019
- TEACHING ASSISTANT: Undergraduate Course - Communication Systems Lab (UHM), Duration: Aug. 2018 – Dec. 2018

Technical Skills

- PROGRAMMING LANGUAGES: C, C++, MATLAB, Python
- SCIENTIFIC COMPUTING PACKAGES: Numpy, Scipy, Scikit-learn, Pandas
- DEEP LEARNING FRAMEWORK: PyTorch
- OS & APPLICATIONS: Linux, MS Office, Git, Bash Scripting, LaTeX
- TYPING SPEED: 50 words per minute

Reviewer

- International Conference on Machine Learning (ICML), 2025
- ICML Workshop on Unifying Data Curation Frameworks Across Domains (DataWorld), 2025
- ICML Workshop on the Impact of Memorization on Trustworthy Foundation Models (MemFM), 2025
- Neural Information Processing Systems (NeurIPS), 2024
- Conference on Lifelong Learning Agents (CoLLAs), 2024-25
- European Conference on Computer Vision (ECCV), 2024
- IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), 2023-24
- CVPR Workshop on Continual Learning in Computer Vision (CLVISION), 2024
- IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2023
- IEEE International Conference on Robotics and Automation (ICRA), 2021

Service

- Research Trainee: AWARE-AI NSF Research Traineeship (NRT) Program, RIT, Jan. 2022 – May 2022
- Program Assistant: Vertically Integrated Projects (VIP), University of Hawaii at Manoa, 2020
- Organizer: Vertically Integrated Project (VIP) Exhibition, University of Hawaii at Manoa, 2018-2020
- Volunteer: IEEE International Conference on Nano/Molecular Medicine and Engineering (NANOMED), 2018
- Student Affiliate: East-West Center, University of Hawaii at Manoa, 2018-2020