Md Jahidul Islam

Ph.D. Candidate
University of Minnesota

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Enrollments

- DDF Fellow
  Dept. of CS, Univ. of Minnesota
  Academic Year 2019-20
- Graduate Research Assistant
  Interactive Robotics & Vision Lab
  Supervisor: Prof. Junaed Sattar
- Graduate Teaching Assistant
  Dept. of CS, Univ. of Minnesota
  Spring 2018, Fall 2017, 2016
- Lecturer, Dept. of CSE
  United Intl. Univ. (UIU), Dhaka
  May 2012 – July 2015

Skills

- Programming
  Python, C++
  Julia, Java, MATLAB, Unix Shell
- Operating Systems
  Linux (Ubuntu), Windows
- Libraries & Tool-kits
  OpenCV, ROS
  TensorFlow, PyTorch
- Robotic platforms
  AQUA 8, TurtleBot 2, OpenROV
- Embedded & low-power AI devices
  Nvidia™ Jetson Xavier, TX2, Nano
  Google™ Coral Edge TPU

Research Work

Interests: Visual perception, deep learning, and underwater robotics.
Thesis: Machine vision for improved human-robot cooperation in adverse underwater conditions.

Education

2015 – Ph.D. Candidate in Computer Science — MN, USA
University of Minnesota, Twin Cities

2012 – 2015 M.Sc. in Computer Science & Engineering — Bangladesh
Bangladesh University of Engineering and Technology

2007 – 2012 B.Sc. in Computer Science & Engineering — Bangladesh
Bangladesh University of Engineering and Technology

Selected Publications

[C1] M. J. Islam, P. Luo, and J. Sattar. *Simultaneous Enhancement and Super-Resolution of Underwater Imagery for Improved Visual Perception*. Robotics: Science and Systems (RSS), 2020. ArXiv: 2002.01155.

[J1] M. J. Islam, Y. Xia, and J. Sattar. *Fast Underwater Image Enhancement for Improved Visual Perception*. IEEE Robotics and Automation Letters (RA-L), 5(2), pp. 3227-3234, 2020. ArXiv: 1903.09766. [*Impact Factor: 3.61]

[C2] M. J. Islam, S. S. Enan, P. Luo, and J. Sattar. *Underwater Image Super-Resolution using Deep Residual Multipliers*. To appear at the IEEE International Conference on Robotics and Automation (ICRA), 2020. ArXiv: 1909.09437.

[C3] M. J. Islam, C. Edge , Y. Xiao, P. Luo, M. Mehtaz , C. Morse, S. S. Enan, and J. Sattar. *Semantic Segmentation of Underwater Imagery: Dataset and Benchmark*. To appear at the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2020. ArXiv: 2004.01241.

[J2] M. J. Islam, J. Hong, and J. Sattar. *Person Following by Autonomous Robots: A Categorical Overview*. The International Journal of Robotics Research (IJRR*), 38 (14), 2019. ArXiv: 1803.08202. [*Impact Factor: 6.134]

[J3] M. J. Islam, M. Fulton, and J. Sattar. *Towards a Generic Diver Following Algorithm: Balancing Robustness and Efficiency in Deep Visual Detection*. IEEE RA-L, 4 (1), pp. 113-120, 2018. [Also presented at the ICRA 2019, Montreal, Canada]

[C4] M. J. Islam, M. Ho, and J. Sattar. *Dynamic Reconfiguration of Mission Parameters in Underwater Human-Robot Collaboration*. IEEE ICRA, 2018, pp. 1-8, Brisbane, Australia.

[C5] M. J. Islam and J. Sattar. *Mixed-domain Biological Motion Tracking for Underwater Human-Robot Interaction*. IEEE ICRA, 2017, pp. 4457-4464, Singapore.

[J4] M. J. Islam, M. Ho, and J. Sattar. *Understanding Human Motion and Gestures for Underwater Human-Robot Collaboration*. Journal of Field Robotics (JFR*), 2018, DOI: 10.1002/ROB.21837. [*Impact Factor: 4.345]

[C6] C. Fabbri, M. J. Islam, and J. Sattar. *Enhancing Underwater Imagery using GANs*. IEEE ICRA, 2018, pp. 7159-7165, Brisbane, Australia.

Papers Under Review

[J5] M. J. Islam, J. Mo, and J. Sattar. *Robot-to-Robot Relative Pose Estimation using Humans as Markers*. Under review at the Autonomous Robots. ArXiv: 1903.00820.

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Community

– Student member
IEEE, IEEE RAS

– Int. Conference Reviewer
ICRA, IROS, CRV

– Int. Journal Referee
IEEE Transactions, RA-L, Elsevier

Extracurricular

– Officer, Self-driving Car Club
Univ. of Minnesota

– Cricketer, Continental Cricket Club
Minnesota Cricket Association

Industry Experience

2019	Summer Internship, R&D Qualcomm Technologies, Inc.	Santa Clara, CA, USA
2018	Summer Internship, R&D Corporate Research Systems Lab, 3M.	Maplewood, MN, USA

Selected Awards

2019-20	Doctoral Dissertation Fellowship (DDF), University of Minnesota.
2019	RAS travel grant for ICRA 2019 in Montreal, Canada.
2017	IEEE/RSJ travel grant for IROS 2017 in Vancouver, Canada.
2015-16	ADC graduate fellowship, University of Minnesota.
2012-13	Runner-up. International Robotics Challenge, IIT Bombay, India.

References

- Prof. Junaed Sattar (Ph. D. Supervisor)
  Assistant Professor, University of Minnesota
  Email: junaed@umn.edu
- Prof. Ibrahim Volkan Isler
  Professor, Dept. of CSE, University of Minnesota
  Email: isler@umn.edu