

Mohammad Samiul Arshad

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Interests

Machine Learning and Computer Vision for Automated Recognition, Reconstruction, and Reproduction of 3D data.

Education

The University of Texas at Arlington

Arlington, TX

Ph.D. in Computer Science and Engineering

Aug. 2016 - Present

- **Research Field:** Deep Learning, Computer Vision, Artificial Intelligence
- **Committee:** Dr. Manfred Huber, Dr. Gautam Das, Dr. Vassilis Athitsos, Dr. William J. Beksi (*advisor*)

Shahjalal University of Science and Technology

Sylhet, Bangladesh

B.S. in Computer Science and Engineering

Sep. 2009 - Dec. 2014

- **Thesis:** Bengali Sign Language Detection and Recognition [J1]
- **Advisor:** Dr. M. Jahirul Islam

Experience

Robotic Vision Laboratory

Arlington, TX

Graduate Researcher

Aug. 2018 - Present

Supervised by Dr. William Beksi, Assistant Professor

- Research on automated reconstruction and reproduction of 3D data from various input modalities
- Devised neural networks to generate synthetic 3D point clouds with color without any supervision [C1]
- Proposed neural architecture to reconstruct 3D open surfaces while restricting outliers [C2]

LEARN Laboratory

Arlington, TX

Graduate Researcher

Aug. 2016 - Aug. 2018

Supervised by Dr. Gergely Zaruba, Professor

- Research on movement detection and tracking over a pressure sensitive floor

TwinBit Limited

Dhaka, Bangladesh

Software Engineer

Jan. 2015 - Aug. 2016

- Platform/Language: iOS/Objective C
- Designed and developed Equalizer Fx: Bass Booster App. (\approx 20K downloads from the App store)

Teaching

The University of Texas at Arlington

Graduate Teaching Associate

Arlington, TX

Aug. 2016 - Present

- Courses: Intermediate Programming (*Fall 2016 - Fall 2017*), Design and Analysis of Algorithms (*Spring 2018 - Fall 2019*), Distributed Systems (*Spring 2019 - Present*)
- Designed quizzes & programming assignments, organized and evaluated course projects

Awards

- Cyneta Networks Outstanding Graduate Teaching Associate Award, 2022
The University of Texas at Arlington
January. 2022
Arlington. TX
- Ph.D. Scholarship
The University of Texas at Arlington
Aug. 2016 - Present
Arlington. TX
- University Merit Scholarship
Shahjalal University of Science and Technology
Aug. 2009 - Aug. 2014
Sylhet, Bangladesh

Services

Reviewer

- IEEE Conference on Computer Vision and Pattern Recognition (CVPR)
- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)
- International Conference on Ubiquitous Robots (UR)
- IEEE/SICE International Symposium on System Integration (SII)
- International Conference on 3D Vision (3DV)

Outreach

- Engineers Week: Volunteer
Jerry Knight STEM Academy (MISD)
Feb. 2022
Mansfield, TX
- College of Engineering Innovation Day: Volunteer Judge
The University of Texas at Arlington
2018 - Present
Arlington, TX
- Programming Contest: Volunteer Referee and Team Mentor
Shahjalal University of Science and Technology
2010 - 2013
Sylhet, Bangladesh

Skills

- **Programming/Scripting:** Python, Matlab, C, C++, Objective C, Java
- **Libraries/Frameworks:** PyTorch, Tensorflow
- **Tools:** GNU/Linux, L^AT_EX, HTML/CSS, Jupyter Notebook
- **Languages:** English (ILR: 4), Bengali (ILR: 5), Hindi (ILR: 2)

Journal Publications

Note: * denotes equal contribution

- [J1] A. M. Jarman*, **S. Arshad***, N. Alam, M. J. Islam. An Automated Bengali Sign Language Recognition System Based on Fingertip Finder Algorithm, *International Journal of Electronics and Informatics (IJEI)*, Volume: 4, Issue: 1, 2015. # citation: 36.

Conference Publications (Refereed)

Note: The presenter is underlined.

- [C2] **M. S. Arshad**, William J. Beksi. Automated Reconstruction of 3D Open Surfaces from Sparse Point Clouds, *First Workshop on Photorealistic Image and Environment Synthesis for Mixed Reality (PIES-MR), International Symposium on Mixed and Augmented Reality, Singapore, 2022*.
- [C1] **M. S. Arshad**, William J. Beksi. A Progressive Conditional Generative Adversarial Network for Generating Dense and Colored 3D Point Clouds, *International Conference on 3D Vision (3DV)*, Fukuoka, Japan, pp. 712-722, 2020. # citation: 4.

Poster Presentation (Refereed)

Note: The presenter is underlined.

- [P2] **M. S. Arshad** and W.J. Beksi. Synthesizing Dense and Colored 3D Point Clouds for Training Deep Neural Networks, *TACC Symposium for Texas Researchers (TACCSTER)*, Austin, USA, 2020.
- [P1] **M. S. Arshad** and W.J. Beksi. 3D Scene Generation via Unsupervised Object Synthesis, *TACC Symposium for Texas Researchers (TACCSTER)*, Austin, USA, 2019.

Media

- [M1] How to Train a Robot (Using AI and Supercomputers), Science Stories: Texas Advanced Computing Center, Jan. 19, 2021

Reference

- Dr. William Beksi - Assistant Professor of Computer Science & Engineering, UTA
Email: william.beksi@uta.edu
- Dr. M. Jahirul Islam - Professor of Computer Science & Engineering, SUST
Email: jahir-cse@sust.edu