

# Mohammad Samiul Arshad

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## Interests

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Interested in machine learning and computer vision applied for automated recognition, reconstruction, and reproduction of 3D data.

## Education

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### 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

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### 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

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### 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

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- 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

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### 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

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- **Programming/Scripting:** Python, Matlab, C, C++, Objective C, Java
- **Libraries/Frameworks:** PyTorch, Tensorflow
- **Tools:** GNU/Linux, L<sup>A</sup>T<sub>E</sub>X, HTML/CSS, Jupyter Notebook
- **Languages:** English (ILR: 4), Bengali (ILR: 5), Hindi (ILR: 2)

## Journal Publications

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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)

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Note: The presenter is underlined.

- [C2] M. S. Arshad, William J. Beksi. IPVNet: Learning Implicit Point-Voxel Features for Open-Surface 3D Reconstruction, *European Conference on Computer Vision (ECCV)*, Tel-Aviv, Israel, 2022. *under review*.
- [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)

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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

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

## Memberships

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- Institute of Electrical and Electronics Engineers (IEEE)

## Reference

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