Mohammad Samiul Arshad

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EDUCATION

Ph.D. in Computer Science & Engineering   Aug. 2016 - Aug. 2023

The University of Texas at Arlington   Arlington, Texas

· **Committee**: Dr. Manfred Huber, Dr. Gautam Das, Dr. Vassilis Athitsos, Dr. William J. Beksi (*advisor*)

· **Dissertation**: Learning from Raw Point Cloud Data for 3D Computer Vision Tasks

· **Courses**: Distributed Systems, Design and Analysis of Algorithms, Data Analysis and Modeling Techniques, Robotics, Computer Architecture, Neural Networks, Machine Learning, Computer Vision, Advanced Computational Models And Algorithms, Special Topics in Advanced Intelligent Systems

B.S. in Computer Science   Aug. 2009 - Dec. 2014

Shahjalal University of Science and Technology   Sylhet, Bangladesh

· **Advisor**: Dr. M. Jahirul Islam

· **Thesis**: Bengali Sign Language Detection and Recognition [1]

· **Courses**: Data Structure and Algorithm, Introduction to Database, Object Oriented Programming, Image Processing, Operating System, Digital Signal Processing, Algorithms and Data Structures

RESEARCH EXPERIENCE

Graduate Research Assistant   Aug. 2018 - Aug. 2023

Robotic Vision Laboratory   Arlington, Texas

· Research on reconstruction and generation of 3D data through Deep Learning and Computer Vision algorithms

· Designing novel neural architecture for solving open problems in Computer Vision

Graduate Research Assistant   Aug. 2016 - Aug. 2018

LEARN Lab   Arlington, Texas

· Research on movement analysis through a pressure-sensitive floor for assisted living

Senior Software Engineer   Jan. 2014 - Aug. 2016

TwinBit   Dhaka, Bangladesh

· Research and development of mobile applications through MVC architecture

· Designed and deployed multiple mobile applications in App Store

TEACHING EXPERIENCE

Teaching Assistant   Aug. 2016 - May. 2023

The University of Texas at Arlington   Arlington, Texas

· **Courses**: Distributed Systems (Fall 19 - Spring 23), Object Oriented Programming (Summer 19), Artificial Intelligence (Summer, 19), Design and Analysis of Algorithms (Spring 19), Algorithms and Data Structures (Fall 18), Mobile Systems Engineering (Summer 18), Introduction to Computers and Programming (Fall 17 - Spring 18), Intermediate Programming (Fall 16 - Summer 17)

· Assisted the course instructor in preparing lesson plans and educational materials for the class

· Conducted office hours; Helped students with their academic work and answered any questions they had about the course material

· Graded assignments and tests, organized lab demonstrations, and provided feedback to students on their performance.

· Conducted class lectures in the absence of the primary instructor

AWARDS

· Cyneta Networks Outstanding Graduate TA Award 2022, The University of Texas at Arlington

Publications

[1] **M. S. Arshad** and W. J. Beksi, "LIST: Learning Implicitly from Spatial Transformers for Single-View 3D Reconstruction," in *International Conference on Computer Vision (ICCV)*, 2023.

[2] **M. S. Arshad** and W. J. Beksi, "Automated Reconstruction of 3D Open Surfaces from Sparse Point Clouds," in *2022 IEEE International Symposium on Mixed and Augmented Reality Adjunct (ISMAR-Adjunct)*, IEEE, 2022, pp. 216–221.

[3] **M. S. Arshad** and W. J. Beksi, "IPVNet: Learning Implicit Point-Voxel Features for Open-Surface 3D Reconstruction," in *Journal of Visual Communication and Image Representation*, 2022.

[4] **M. S. Arshad** and W. J. Beksi, "A Progressive Conditional Generative Adversarial Network for Generating Dense and Colored 3D Point Clouds," in *2020 International Conference on 3D Vision (3DV)*, 2020, pp. 712–722. DOI: 10.1109/3DV50981.2020.00081.

[5] A. M. Jarman, **M. S. Arshad**, N. Alam, and M. J. Islam, "An automated bengali sign language recognition system based on fingertip finder algorithm," *International journal of electronics & informatics*, vol. 4, no. 1, pp. 1–10, 2015.

Poster Presentation (Refereed)

Note: The presenter is underlined.

[P1] <u>**M. S. Arshad**</u> and W.J. Beksi. IPVNet: Learning Implicit Point-Voxel Features for Open-Surface 3D Reconstruction, *Innovation Day, UTA*, Arlingotn, TX, 2023.

[P2] <u>**M. S. Arshad**</u> and W.J. Beksi. Automated Reconstruction of 3D Open Surfaces from Sparse Point Clouds, *2022 International Symposium on Mixed and Augmented Reality*, 2022.

[P3] <u>**M. S. Arshad**</u> and W.J. Beksi. Synthesizing Dense and Colored 3D Point Clouds for Training Deep Neural Networks, *TACC Symposium for Texas Researchers (TACCSTER)*, Austin, TX, 2020.

[P4] <u>**M. S. Arshad**</u> and W.J. Beksi. 3D Scene Generation via Unsupervised Object Synthesis, *TACC Symposium for Texas Researchers (TACCSTER)*, Austin, TX, 2019.

Media

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

Services

Reviewer

· 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	Feb. 2022
Jerry Knight STEM Academy (MISD)	Mansfiled, TX
· College of Engineering Innovation Day: Volunteer Judge	Mar. 2022
The University of Texas at Arlington	Arlington, TX
· Programming Contest: Volunteer and Team Mentor	2010 - 2011
Shahjalal University of Science and Technology	Sylhet, Bangladesh

Skills

· **Programming**: Python, Matlab, C, C++, Objective C, Java, Bash

· **Libraries/Frameworks**: PyTorch, PyTorch3D, Tensorflow, Keras, OpenCV, Open3D, scikit-learn

· **Tools**: GNU/Linux, LaTeX, Git, Jupyter Notebooks, Slurm

References

- Dr. William Beksi - Assistant Professor of Computer Science & Engineering, UTA
  Email: william.beksi@uta.edu
- Dr. Vassilis Athitsos - Professor of Computer Science & Engineering, UTA
  Email: athitsos@uta.edu
- Dr. Gautam Das - Associate Dean For Research , College of Engineering, UTA
  Email: gdas@uta.edu
- Dr. M. Jahirul Islam - Professor of Computer Science & Engineering, SUST
  Email: jahir-cse@sust.edu