

Md Ashaduzzaman Rubel Mondol

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Education

Ph.D. in Computer Science

08/2019 – 12/2023 (Expected)

The University of Texas at Arlington

B.Sc. in Electrical and Telecommunication Engineering

2008 - 2012

The Southeast University, Bangladesh

CGPA- 4.0 on scale of 4.0

Research Experience

Human Data Interaction Lab (HDILab), UTA

2019 - Present

Advisor: Dr. Deokgun Park

Building a Simulated 3D environment with *Unity3D* and *ML Agents* for testing and development of Learning Agents. The environment provides the necessary experiences a human baby goes through during fetus to 12 months of age. It also provides a mother character acting as a social partner. To evaluate the learning agent, it provides different experiments from Developmental Psychology.

Work Experience

University of Texas at Arlington

2019 - Present

Working as Graduate Teaching Assistant for Data Mining, Artificial Intelligence, Software Engineering

Samsung R&D Institute Bangladesh

2012 - 2019

Designation: Staff Engineer

Worked as Project Leader of Social Platform for iOS since 2018.

Projects:

- Samsung Social Platform for iOS
A cross-platform, multi-device experience SNS platform for iOS.
 - Project and team management, Software design, architectural implementation and feature development, R&D on new ideas, collaborating with overseas teams (Onshore, offshore)
- Samsung Account iOS SDK
Samsung account SDK has been developed to be used by other apps for accessing Samsung Account Server
 - Worked with the implementation of server-client architecture, and security improvements.
- Smart things (Samsung Connect)
IoT based application to control and monitor IoT enabled devices through iotivity framework developed first for Galaxy S8 in Android Platform.
 - Worked on content streaming over DLNA using AllShare library
 - Development, optimization and security enhancement of Plugin platform.
- Bitmap Engine (Arctecture)
Bitmap engine is a bitmap based 2D drawing engine which is used to develop canvas-based drawing/art application. The Arctecture app is available in playstorte.

- Worked on Core engine and SDK design and development. Developed different drawing tool algorithms using Lattice Boltzmann Fluid simulation, Bezier curve path generation, GP-GPU programming with OpenGL, OpenCL, Kubelka-Munk Color-Mixing algorithms.
 - Complex UI design and developments in Android Platform
 - As part of this project I also developed a *VR based drawing canvas* with real-time drawing functionalities.
- MEA Android commercialization
Commercialization of different android models including Galaxy S4, S5, Note 4, Note 5 models.
 - Worked on optimization, feature developments, localization and bug fixing of Android OS for Samsung devices.

Publication

A Testbed for the Study of Human-Level Artificial Intelligence

- M. A. Rubel Mondol, S. Narasimhan, S. M. Islam and D. Park
- 36th AAAI Conference on Artificial Intelligence - 2022
- Still under phase 2 review. Passed phase 1 Review

SEDRO: A Simulated Environment for Developmental Robotics

- Aishwarya Pothula, M. A. Rubel Mondol, S. Narasimhan, S. M. Islam and D. Park
- 2020 Joint IEEE 10th International Conference on Development and Learning and Epigenetic Robotics (ICDL-EpiRob)

Modeling Social Interaction for Baby in Simulated Environment for Developmental Robotics

- Md Ashaduzzaman Rubel Mondol, Aishwarya Pothula, Deokgun Park
- Presented at BabyMinds, NuerIPS 2020 workshop

Collaborative drawing method and electronic device therefor

- Md Shamsul Arifin Mozumder, Sifat Afroj Moon, Jewel Nandy, Md Ashaduzzaman Rubel Mondol, Samsad Ul Islam
- <https://patents.google.com/patent/US20170123648A1/en>

Academic Projects

Image Caption Generation and Search

- Generated image caption of a given image based on InceptionV3 pretrained model and GRU using TensorFlow. With the generated caption searched over dataset and ranked using TF/IDF.

Traffic Volume Estimator

- Built a traffic volume estimator Based on numerical features as input to Random Forest models using TensorFlow.

Relevant Courses

● Udemy Courses:

- AI: Reinforcement Learning in Python (Certificate ID: *UC-a1287471-29ab-4a1e-95d3-96c74cb00408*)
- Advanced AI: Deep Reinforcement Learning in Python (Certificate ID: *UC-38d14056-64d5-414a-92b3-9cd2bf9d638b*)

● Academic Courses:

- Neural Network
- Machine Learning
- Data Mining
- Advanced Intelligent Systems: Human Level AI
- Advanced Software Engineering

- Machine Learning libraries: TensorFlow, Keras, PyTorch, Unity ML Agents
- Mobile OS and other platforms: Android, iOS application and Unity 3D game development
- Languages: Python, Java, C/C++, Matlab, R, Objective C, Swift, C#, SQL
- Libraries: OpenGL, OpenCL, Skia, LibGDX, GearVR Framework
- Other: Software design patterns, Agile methodology

Open Source Contribution

- Developed and open sourced my research project SEDRo. It's publicly available at: <https://github.com/utaresearch/SEDRO>
 - Details about this project can be found at: <https://sedro-env.github.io/>

Honors and Awards

- Achieved **Chancellor Gold medal** award
 - For securing the highest result among all Bachelor students passing in 2012
- Awarded **Best Code Reviewer of the month** for months Jan-Mar, 2018 from Samsung R&D Institute Bangladesh
- Received **Icon of the month** award 3 times for June 2013, September 2014 and November 2017 from Samsung R&D Institute
- Achieved **Professional level** on Algorithmic Problem solving Test in Samsung R&D Institute Bangladesh
- Secured good positions in multiple ACM problem solving contests among around 100+ teams
 - 5th position in *National Collegiate Programming Contest* 2010
 - 15th position in *International Collegiate Programming Contest*, Dhaka Regional, 2010