

ZAHIDUR TALUKDER

[Scholar](#) | [github](#) | [website](#) | 682-266-9164 | zahidurrahim.talukder@uta.edu | [Linkedin](#)

OBJECTIVE

My research is focused on the theoretical, empirical, and security aspects of machine learning, data science, algorithms, and distributed learning. I have been working on the efficient data and client handling of federated learning. I am highly passionate about applications involved with machine learning, data science, algorithms, and distributed learning.

EDUCATION

PhD Candidate, Computer Science, The University of Texas at Arlington, GPA: 4.00/4.00

Sep 2019 - Aug 2024

Research Interests: Machine Learning, Privacy & Security, Algorithm, Distributed System

EXPERIENCE

Graduate Research Assistant

Sep 2019 - Present

Rigorous Design Lab, The University of Texas at Arlington

- Dived deep to derive an efficient aggregation algorithm to handle data quality in federated learning.
- Enabling clients to take decisions regarding participation in federated learning to save computation and communication costs.
- Ensuring fairness among different clients with heterogeneous model architecture.

Graduate Teaching Assistant

Sep 2019 - Present

The University of Texas at Arlington

- Taught both graduate and undergraduate level courses like algorithms, data structure, computer architecture, etc.

TECHNICAL SKILLS

- **Languages:** Python, Matlab, C, LaTeX
- **Tools:** Tensorflow, Pytorch, Keras, Matlab, MySQL, Scikit-Learn, Pandas, Numpy, Linux, Git
- **Expertise:** Machine Learning, Federated Learning, Data Science, Deep Learning, Statistics, Algorithm, Security

FEATURED PROJECTS

Fair Federated Learning with Heterogeneous Devices

Aug 2022 - Present

Proposed algorithms ensure fairness for heterogeneous devices with respect to model architecture for federated learning.

Self Regulating Clients for Federated Learning

Jan 2022 - Present

The designed algorithm enables self-regulating clients who can actively take decisions regarding participation in federated learning to save both local computation and communication costs.

Publications: [SIGMETRICS 2022](#)

Auto-Weighted Aggregation for Heterogeneous Federated Learning

Jan 2021 - May 2022

The proposed lightweight auto-weighted aggregation techniques can handle the heterogeneity of federated learning by minimizing the weight of unfavorable model updates.

Publications: [IEEE EDGE 2022](#)

Server-Level Power Monitoring in Data Centers Using Single-Point Voltage Measurement

Sep 2019 - Present

The proposed low-cost novel power monitoring approach that uses only one sensor to extract power consumption information of all servers by utilizing the conducted electromagnetic interference of server power supplies.

Publications: [SENSYS 2022](#)

SELECTED PUBLICATIONS

- "Self Regulating clients for Federated Learning "
Zahidur Talukder, Mohammad A. Islam (In-Submission)
- "Computationally Efficient Auto-Weighted Aggregation for Heterogeneous Federated Learning"
Zahidur Talukder, Mohammad A. Islam ([IEEE EDGE 2022](#))
- "FedSRC: Efficient Federated Learning with Self-Regulating Clients" (Poster)
Zahidur Talukder, Mohammad A. Islam ([SIGMETRICS 2022](#))
- "Towards Server-Level Power Monitoring in Data Centers Using Single-Point Voltage Measurement" (Poster)
Pranjol Gupta, Zahidur Talukder, Mohammad A. Islam ([SENSYS 2022](#))

RECOGNITION

- **Best Poster Award Honorable Mention** - SCRF@UTA 2022
- **Secondary and Higher Secondary Board Merit Scholarship** - Bangladesh Education Board (top 0.1%)

VOLUNTEERING EXPERIENCE

- Student volunteer at SC22, Dallas, Tx, USA
- UTA LSAMP - Summer Research Academy mentor in 2022
- Culture Secretary of Bangladesh Student Organization (BSO) in 2021
- Reviewer in The 4th Workshop on Online Abuse and Harms (WOAH) in 2020