

# Md Sadman Siraj

RESEARCH ASSISTANT

The University of New Mexico, Dept. of Electrical and Computer Engineering, Albuquerque, NM 87131, USA

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## Education

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### Ph.D.:

Albuquerque, NM, USA

#### THE UNIVERSITY OF NEW MEXICO

Jan. 2022 - Present

- **Laboratory:** Performance and Resource Optimization Lab (**PROTON LAB**)
- **Major Field Program:** Computer Engineering
- **Research Specialization:** Game Theory, Reinforcement Learning, Deep Learning
- **Advisor:** Dr. Eirini Eleni Tsiropoulou (**Personal Website**)
- **Current GPA:** 4.33/4.00

### Master of Science (MSc) in Computer Engineering:

Albuquerque, NM, USA

#### THE UNIVERSITY OF NEW MEXICO

Jan. 2022 - Present

- **Laboratory:** Performance and Resource Optimization in Networks Lab (**PROTON LAB**)
- **Major Field Program:** Computer Engineering
- **Advisor:** Dr. Eirini Eleni Tsiropoulou (**Personal Website**)
- **Current GPA:** 4.33/4.00

### Bachelor of Science (BSc) in Electrical & Electronic Engineering

Dhaka, Bangladesh

#### UNIVERSITY OF DHAKA

Jan. 2016 - Mar. 2020

- **Major Field:** Communication
- **Minor Field:** Electronics
- **Bsc Project:** "Prediction of Gender and Age from Interital Sensor-based Gait Data using Deep Learning"
- **Advisor:** Dr. Md Atiqur Rahman Ahad (**Personal Website**)
- **GPA:** 3.59/4.00

## Work & Research Experience

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### The University of New Mexico

#### RESEARCH ASSISTANT, PERFORMANCE AND RESOURCE OPTIMIZATION LABORATORY (**PROTON LAB**)

- Game Theory
- Deep Learning, Reinforcement Learning
- Alternative Positioning, Navigation and Timing (APNT)

Albuquerque, NM, USA

May 2022 - Present

### The University of New Mexico

#### TEACHING ASSISTANT, PERFORMANCE AND RESOURCE OPTIMIZATION LABORATORY (**PROTON LAB**)

- ECE 314L: Signals & Systems
- ECE 360: Electromagnetic Fields & Waves
- ECE 381: Introduction to Power Systems

Albuquerque, NM, USA

Jan. 2022 - May 2022

### Upskill

#### COURSE INSTRUCTOR, UPSKILL ONLINE LEARNING

- Python Programming Fundamentals
- Python Data Structures
- Web Data in Python
- Databases in Python

Dhaka, Bangladesh

Jun. 2020 - Dec. 2021

### 10 Minute School

#### ANDROID APPLICATION DEVELOPER

- Full-Stack Android Application Development in Java

Dhaka, Bangladesh

Aug. 2016 - Dec. 2017

## Skills

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**Programming Languages (Excellent)** Python, MATLAB, C++, C, Java

**Programming Frameworks (Excellent)** PyTorch, Tensorflow, Scikit, Network Simulator 2

**Development Boards** PICkit-PIC16F877A, NodeMCU-ESP8266, Raspberry Pi 3, Arduino-ATMEGA328P

**Integrated Development Environments (IDEs)** Anaconda, MPLAB-XIDE, PIC Dev. Studio, Android Studio, VS Code

**Languages** Bangla (Native), English (Full Proficient)

## Publications

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### Conferences

1. **Siraj, M. S.**, Rahman, A. B., Diamanti, M., Tsiropoulou, E. E., Papavassiliou, S., & Plusquelic, J., "Positioning, Navigation, and Timing enabled by Reconfigurable Intelligent Surfaces, Phase Shift Optimization, and Reinforcement Learning", IEEE Military Communications Conference, 2022. (Under Review)
2. **Siraj, M. S.**, Hossain, M. S., Brown, R., Tsiropoulou, E. E., & Papavassiliou, S., "Incentives to Learn: A Location-based Federated Learning Model", IEEE Global Communications Conference, 2022. (Under Review)
3. Rahman, A. B., **Siraj, M. S.**, Kubiak, N., Tsiropoulou, E. E., & Papavassiliou, S., "Network Economics-based Crowdsourcing in Online Social Networks", IEEE Global Communications Conference, 2022. (Under Review)
4. Faisal, M. A. A., **Siraj, M. S.**, Abdullah, M. T., Shahid, O., Abir, F. F., & Ahad, M. A. R. (2020, September). A pragmatic signal processing approach for nurse care activity recognition using classical machine learning. In Adjunct Proceedings of the 2020 ACM International Joint Conference on Pervasive and Ubiquitous Computing and Proceedings of the 2020 ACM International Symposium on Wearable Computers (pp. 396-401). [doi: 10.1145/3410530.3414337]
5. **Siraj, M. S.**, Faisal, M. A. A., Shahid, O., Abir, F. F., Hossain, T., Inoue, S., & Ahad, M. A. R. (2020, September). UPIC: User and position independent classical approach for locomotion and transportation modes recognition. In Adjunct Proceedings of the 2020 ACM International Joint Conference on Pervasive and Ubiquitous Computing and Proceedings of the 2020 ACM International Symposium on Wearable Computers (pp. 340-345). [doi: 10.1145/3410530.3414343]
6. **Siraj, M. S.**, Shahid, O., & Ahad, M. A. R. (2021). Cooking Activity Recognition with Varying Sampling Rates Using Deep Convolutional GRU Framework. In Human Activity Recognition Challenge (pp. 115-126). Springer, Singapore. [doi: 10.1007/978-981-15-8269-1\_10]
7. **Siraj, M. S.**, & Ahad, M. A. R. (2020, August). A Hybrid Deep Learning Framework using CNN and GRU-based RNN for Recognition of Pairwise Similar Activities. In 2020 Joint 9th International Conference on Informatics, Electronics & Vision (ICIEV) and 2020 4th International Conference on Imaging, Vision & Pattern Recognition (icIVPR) (pp. 1-7). IEEE. [doi: 10.1109/ICIEV.2020.9306630]
8. Khabir, K. M., **Siraj, M. S.**, Ahmed, M., & Ahmed, M. U. (2019, May). Prediction of gender and age from inertial sensor-based gait dataset. In 2019 Joint 8th International Conference on Informatics, Electronics & Vision (ICIEV) and 2019 3rd International Conference on Imaging, Vision & Pattern Recognition (icIVPR) (pp. 371-376). IEEE. [doi: 10.1109/ICIEV.2019.8858521]
9. Khabir, K. M., **Siraj, M. S.**, Habib, M. A., Hossain, T., & Ahad, M. A. R. (2018, June). A study on DSR routing protocol in Adhoc network for daily activities of elderly living. In 2018 Joint 7th International Conference on Informatics, Electronics & Vision (ICIEV) and 2018 2nd International Conference on Imaging, Vision & Pattern Recognition (icIVPR) (pp. 573-577). IEEE. [doi: 10.1109/ICIEV.2018.8640994]
10. Saha, S. S., **Siraj, M. S.**, & Habib, W. B. (2017, December). FoodAlytics: A formalin detection system incorporating a supervised learning approach. In 2017 IEEE Region 10 Humanitarian Technology Conference (R10-HTC) (pp. 26-29). IEEE [doi: 10.1109/R10-HTC.2017.8288898]

## Honors & Awards

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2021	<b>Champion, Space Expedition Contest, IEEE BRACU AES Chapter, BRACU</b>	<i>Dhaka, Bangladesh</i>
2020	<b>Champion, Satellite Mission Idea Contest, 4th International BIRDS Workshop 2019</b>	<i>Dhaka, Bangladesh</i>
2019	<b>Science for Mankind Research Award, DUSS, University of Dhaka</b>	<i>Dhaka, Bangladesh</i>
2018	<b>Champion, Innovative Idea Contest, Engenius 2018, AUST</b>	<i>Dhaka, Bangladesh</i>
2017	<b>Champion, IEEE Bangladesh Section Humanitarian Idea Contest 2017</b>	<i>Dhaka, Bangladesh</i>
2017	<b>Champion, Exhibition, Techkriti Innovation Challenge, Techkriti Bangladesh Round 2017</b>	<i>Dhaka, Bangladesh</i>
2017	<b>Participant in NASA Space Apps Challenge 2017, Bangladesh Round</b>	<i>Dhaka, Bangladesh</i>