

# TASMEEN ZAMAN ORNEE

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## Education

<b>Auburn University</b> <i>Ph.D., Electrical and Computer Engineering</i>	<b>Auburn, AL, Aug. 2018 – Present</b> <i>CGPA: 4.00/4.00</i>
<b>Auburn University</b> <i>M.S., Electrical and Computer Engineering</i>	<b>Auburn, AL, Aug. 2018 – Aug. 2022</b> <i>CGPA: 4.00/4.00</i>
<b>Bangladesh University of Engineering and Technology</b> <i>B.Sc., Electrical and Electronics Engineering</i>	<b>Dhaka, Bangladesh, Feb. 2013 – Sep. 2017</b> <i>3.73/4.00</i>

## Research Interests

Communication Networks  
Information Theory  
Age of Information  
Remote Estimation  
Reinforcement Learning  
Optimization and Decision Theory

## Awards and Honors

<b>Candidate Profile</b> , ACM SIGMETRICS Performance Evaluation Review accepted for a special issue on job market candidates.	Dec 2023
<b>IEEE ComSoc Student Travel Grant</b> , IEEE MILCOM to attend and present paper at IEEE MILCOM 2023 in Boston, MA.	Nov 2023
<b>NSF Travel Grant</b> , North American School of Information Theory to attend and present poster at NASIT 2023 in Philadelphia, PA.	June 2023
<b>100+ Women Strong Outstanding Graduate Student Award</b> for outstanding academic and research performance.	Feb 2023
<b>100+ Women Strong Travel Fellowship Award</b> to attend and present poster at ITA 2023 in San Diego, CA.	Feb 2023
<b>ACM SIGMOBILE Student Travel Grant</b> , ACM MobiHoc to attend ACM MobiHoc 2023 in Seoul, Korea.	Oct 2022
<b>100+ Women Strong Travel Fellowship Award</b> to attend ACM MobiHoc 2023 in Seoul, Korea.	Oct 2022
<b>IEEE INFOCOM Student Conference Grant</b> to attend IEEE INFOCOM virtually.	June 2022
<b>Best Paper Award</b> , IEEE WiOpt for paper with title <i>Sampling for Remote Estimation through Queues: Age of Information and Beyond</i>	June 2019
<b>Dean's Award</b> , BUET, Bangladesh for outstanding academic performance in those years.	2017, 2016, 2015
<b>HSC Scholarship (General)</b> , Government of Bangladesh for outstanding results in HSC examination	2012
<b>Disciplined Student Award</b> , Rajuk Uttara Model College for being the most disciplined student in these years.	2012, 2010
<b>SSC Scholarship (Talent)</b> , Government of Bangladesh for outstanding results in SSC examination	2010
<b>Junior Scholarship (Talent)</b> , Government of Bangladesh, Position: <b>5th in Dhaka Board</b> for outstanding results in Junior Scholarship examination	2008
<b>Primary Scholarship (Talent)</b> , Government of Bangladesh for outstanding results in Primary Scholarship examination	2005

## PUBLICATIONS

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### Book Chapter:

- **Tasmeen Zaman Ornee** and Yin Sun, “Age of Information and Remote Estimation” in *Age of Information: Foundations and Applications*. Bo Zhou, Walid Saad, Harpreet S. Dhillon, Nikolas Pappas, and Mohamed Abd-Elmagid eds. *Cambridge University Press (CUP)*, 2023.

### Journal:

- **Tasmeen Zaman Ornee** and Yin Sun, “Sampling and Remote Estimation for the Ornstein-Uhlenbeck Process through Queues: Age of Information and Beyond”, *IEEE/ACM Transaction on Networking*, 2021. **(Recommended for Fast-tracked Review)**

### Conference publications:

- **Tasmeen Zaman Ornee** “Theory of Timely Remote Estimation and Applications to Situational Awareness”, accepted by *ACM SIGMETRICS Performance Evaluation Review*, 2023.
- **Tasmeen Zaman Ornee**, Md Kamran Chowdhury Shisher, Clement Kam, and Yin Sun, “Context-Aware Status Updating: Wireless Scheduling for Maximizing Situational Awareness in Safety-Critical Systems”, *IEEE MILCOM QuAVoI Workshop*, 2023.
- **Tasmeen Zaman Ornee** and Yin Sun, “A Whittle Index Policy for the Remote Estimation of Multiple Continuous Gauss-Markov Processes over Parallel Channels”, *ACM MobiHoc*, 2023.
- **Tasmeen Zaman Ornee** and Yin Sun, “Performance Bounds for Sampling and Remote Estimation of Gauss-Markov Processes over a Noisy Channel with Random Delay”, *IEEE SPAWC*, 2021. **(Invited Paper)**
- **Tasmeen Zaman Ornee** and Yin Sun, “Sampling for Remote Estimation through Queues: Age of Information and Beyond”, *IEEE WiOpt*, 2019. **(Best Paper Award)**
- Md. Kamran Chowdhury Shisher, **Tasmeen Zaman Ornee**, and Md. Farhad Hossain, “QoS aware user association in massive MIMO enabled hetnets for DTU and NDTU traffic”, *IEEE ICAEE*, 2017.

### Preprints & In Progress

- **Tasmeen Zaman Ornee**, Md Kamran Chowdhury Shisher, Clement Kam, and Yin Sun, “Timely Updates for Situational Awareness”, in preparation, 2023.
- **Tasmeen Zaman Ornee** and Yin Sun, “Remote Estimation of Gauss-Markov Processes over Multiple Channels: A Whittle Index Policy”, submitted to *IEEE/ACM Transactions on Networking*, 2023.

## Work EXPERIENCE

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**Research Assistant**, Real-time Networking Lab, Auburn University Fall 2018-present

- Developed optimal sampling policy for a class of stochastic processes and low-complexity algorithms for remote estimation by utilizing tools from probability theory, optimization, and stochastic processes.
- Designed efficient Whittle index scheduling policies for multiple sensors monitoring multiple diffusion processes.
- Investigated different safety-critical systems for designing scheduling algorithms to reduce loss due to the unawareness of the surrounding situation. Achieved up to 100 times performance gain for the developed policy.

**Teaching Assistant**, ELEC 2120 Signals and Systems, Auburn University Fall 2021, Fall 2022, Spring 2023

- Conducted lab lectures on linear Systems, convolution, Fourier series, Fourier transformation, and Laplace transformation both with TMS module and MATLAB.
- Graded the homeworks, quizzes, and labs for approximately 55 students.

**Teaching Assistant**, ELEC 3810 Fundamentals of Electrical Engineering, Auburn University Spring 2022

- Graded the homeworks, quizzes, and exams for approximately 60 students.

## TALKS

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### Context-aware Status Updating: Wireless Scheduling for Maximizing Situational Awareness in Safety-critical Systems

- IEEE MILCOM 2023-Workshop on QuAVoI, Boston, MA Oct 2023
- Virginia Polytechnic Institute and State University (virtual) Oct 2023

### A Whittle Index Policy for the Remote Estimation of Gauss-Markov Processes over Multiple Channels

- ACM MobiHoc 2023, Washington, DC Oct 2023
- University of Maryland, College Park, MD Oct 2023
- Middle East Technical University (virtual) Oct 2023
- NASIT, Poster Presentation, Philadelphia, PA June 2023
- ITA, Poster Presentation, San Diego, CA Feb 2023

**Optimizing age of information with correlated sources,** Oct 2022  
ACM MobiHoc 2022 (on behalf of Vishrant Tripathi and Eytan Modiano), Seoul, South Korea.

**Sampling of Gauss-Markov Processes for Remote Estimation,** Oct 2022  
Ph.D. General Examination, Auburn University, Auburn, AL.

**Sampling of Gauss-Markov Processes over a Channel with Random Delay,** April 2022  
Auburn Research Symposium, Auburn University, Auburn, AL.

**Performance Bounds for Sampling and Remote Estimation of Gauss-Markov Processes over Channel with Random Delay,** Sep 2021  
IEEE SPAWC (virtual).

**Sampling for Remote Estimation through Queues: Age of Information and Beyond**  

- Wireless Seminar, Auburn University, Auburn, AL Sep 2019
- IEEE/IFIP WiOpt, Avignon, France June 2023

## SERVICES

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**Reviewer for Journal Manuscript Submissions** 2020-present

- Journal on Communications and Networks (JCN), 2023
- IEEE Transactions on Networking (ToN), 2022, 2023
- IEEE Transactions on Wireless Communications, 2020, 2022
- IEEE Journal on Selected Areas in Communication AoI, 2020

**Reviewer for Conference Manuscript Submissions** 2019-present

- IEEE INFOCOM, 2020, 2021, 2022, 2023
- IEEE ITC, 2022
- IEEE ISIT, 2022
- IEEE INFOCOM AoI Workshop, 2019, 2020, 2022
- IEEE SPAWC, 2021
- IEEE WCNC, 2021
- IEEE WCSP, 2019

Maintainer of an **online paper repository on Age of Information** Aug 2018-present

**Auxiliary Committee Member**, Bangladesh Student Organization, Auburn University 2021-2022

**Volunteer** on E-Day, Auburn University, Auburn, AL Feb 2020

**Outreach Activity:** Helped to host an event for 3-5th grader students from Lakeside Eelemntary School at Dept. of ECE, Auburn University, Auburn, AL Jan 2019

## PROFESSIONAL MEMBERSHIP

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IEEE Graduate Student Member

IEEE Information Theory Society Member

IEEE Communication Society Member

ACM SIGMOBILE Member

## REFERENCES

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**Prof. Yin Sun**, yzs0078@auburn.edu, Auburn University

**Prof. Shiewen Mao**, smao@auburn.edu, Auburn University

**Prof. Anthony Ephremides**, tony@eng.umd.edu, University of Maryland, College Park

**Prof. Elif Uysal**, uelif@metu.edu.tr, Middle East Technical University