

# Sima Noorani

nooranis@seas.upenn.edu  
<https://nooranisima.github.io/>

## Education

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**University of Pennsylvania** Philadelphia, PA  
Ph.D., Electrical and Systems Engineering  
(Advisors: George J. Pappas, Hamed Hassani) 2022 – Present

**University of Pennsylvania** Philadelphia, PA  
M.S.E., Electrical and Systems Engineering 2022 – 2025

**Drexel University** Philadelphia, PA  
B.S., Electrical Engineering (Minor: Computer Science) 2017 – 2022

## Work Experience

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**Cybersecurity Engineer Intern**, Lockheed Martin, PA Apr. 2021 – Apr. 2022  
**Cloud Developer Intern**, Bristol Myers Squibb, Hopewell, NJ Apr. 2020 – Sep. 2020  
**Machine Learning Engineer Intern**, Comcast, Philadelphia, PA Apr. 2019 – Sep. 2019  
**Undergraduate Research Assistant**, Drexel University Jun. 2018 – Sep. 2018  
**Resident Assistant**, Housing and Residence Life, Drexel University 2018 – 2019  
**Multi-subject Tutor**, Academic Center for Engineers, Drexel University Mar. 2018 – Apr. 2019

## Research Interests

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I am interested in developing uncertainty quantification methods for modern machine learning models—including generative models such as LLMs—and in designing guarantees that remain meaningful for end users making real decisions, especially in human–AI collaborative settings.

**Keywords:** Conformal prediction, uncertainty quantification, human–AI collaboration

## Papers

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### Conference and Workshop Papers

- [1] **S. Noorani\***, S. Kiyani\*, G. J. Pappas, and H. Hassani. *Conformal Prediction Beyond the Seen: A Missing Mass Perspective for Uncertainty Quantification in Generative Models*. Neural Information Processing Systems (NeurIPS), 2025. Also accepted to the R2-FM Workshop at ICML 2025.
- [2] **S. Noorani**, O. Romero, N. Dal Fabbro, H. Hassani, and G. J. Pappas. *Conformal Risk Minimization with Variance Reduction*. In submission. Also accepted to the R2-FM Workshop at ICML 2025.

### Preprints

- [1] **S. Noorani\***, S. Kiyani\*, G. J. Pappas, and H. Hassani. *Human-AI Collaborative Uncertainty Quantification*. arXiv:2510.23476, 2025.

## Professional Activity

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### Reviewer

International Conference on Learning Representations (ICLR): 2025, 2026.

Learning for Dynamics and Control (L4DC): 2026.

IEEE International Symposium on Information Theory (ISIT): 2025.

## Teaching Experience

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### Teaching Assistant

CIS 5200: *Foundations of Machine Learning* University of Pennsylvania

CIS 3333: *Mathematics of Machine Learning* University of Pennsylvania

### Other Teaching & Mentoring

Multi-subject Tutor, Academic Center for Engineers Drexel University

Engineering Leadership Teaching Assistant/Scholar Drexel University

Instructor-Assistant Volunteer, TechGirlz Drexel University

## Awards & Honors

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Dean's Fellowship University of Pennsylvania, 2022 – Present

Dean's List Distinction Drexel University, 2017 – 2022

STAR Scholar Drexel University, 2017

Merit-based Founder's Scholarship Drexel University, 2017 – 2022

Honors Student Distinction Drexel University, 2017 – 2022

## Selected Talks

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- *Conformal Prediction Beyond the Seen: A Missing Mass Perspective for Uncertainty Quantification.*  
Max Planck Institute, 2025.
- *Human-AI Collaborative Uncertainty Quantification.*  
ANSR Reading Group, University of California, Berkeley, 2025.