

## Education

- 2019–now **PhD in Electrical and Computer Engineering**, *University of Waterloo*, Canada.  
Advisor: Stephen L. Smith  
Teaching Assistant Award, Faculty of Engineering (2021)  
University of Waterloo Graduate Scholarship (\$1.2k) (2022)
- 2017–2019 **Masters in Systems Design Engineering**, *University of Waterloo*, Canada.  
Advisors: Bryan Tripp & Graham Taylor  
Vector Institute Research Award (\$4k) (2018, 2019)  
University of Waterloo Graduate Scholarship (\$1k) (2019)  
International Master's Student Award (\$6.5k) (2018, 2019)  
Thesis: Correlated Noise in Deep Convolutional Neural Networks
- 2012–2017 **Bachelors in Computer Engineering**, *University of Waterloo*, Canada.  
Engineering International Student Scholarship (\$20k) (2013)  
President's Scholarship of Distinction (\$2k) (2013)  
President's Research Award (\$1.5k) (2015)  
GPA: 3.7/4.0 (Distinction)

## Publications & Preprints

- 2023 **A Unified Approach to Optimally Solving Sensor Scheduling and Sensor Selection Problems in Kalman Filtering.**  
S. Dutta, N. Wilde, S. L. Smith  
62nd IEEE Conference on Decision and Control (CDC), 2023.
- 2023 **Approximation Algorithms for Robot Tours in Random Fields with Guaranteed Estimation Accuracy.**  
S. Dutta, N. Wilde, P. Tokekar, S. L. Smith  
International Conference on Robotics and Automation (ICRA), 2023
- 2022 **Informative Path Planning in Random Fields via Mixed Integer Programming.**  
S. Dutta, N. Wilde, S. L. Smith  
61st IEEE Conference on Decision and Control (CDC), 2022.
- 2022 **An Improved Greedy Algorithm for Subset Selection in Linear Estimation.**  
S. Dutta, N. Wilde, S. L. Smith  
20th European Control Conference (ECC), 2022.
- 2018 **Convolutional Neural Networks Regularized by Correlated Noise.**  
S. Dutta, B. Tripp, G. Taylor  
15th Canadian Conference on Computer and Robot Vision (CRV), 2018.
- 2016 **Barcodes for Medical Image Retrieval Using Autoencoded Radon Transform.**  
H. Tizhoosh, C. Mitcheltree, S. Zhu, and S. Dutta  
23rd International Conference on Pattern Recognition (ICPR), 2016.

## Research Experience

- Summer 2018 **Research Intern**, *Preferred Networks*, Tokyo, Japan.  
Advisors: Shunta Saito & Masaki Saito  
Worked on scene prediction/generation using generative-adversarial networks.

- Summer 2017 **Research Intern**, *Latent Logic (now Waymo)*, Oxford, United Kingdom.  
Advisors: Joao Messias & Shimon Whiteson  
Worked on 3D pose estimation from 2D video.
- Fall 2016 **Research Intern**, *Amazon Search*, Palo Alto, USA.  
Advisors: Bing Yin & Erick Cantu-Paz  
Worked on ranking search queries on Amazon.com using Deep Structured Semantic Models.
- Summer 2016 **Undergraduate Student**, *Adaptive Systems Lab*, University of Waterloo, Canada.  
Advisor: Dana Kulic  
Worked on regression methods for human motion prediction using recursive neural networks.
- Summer 2016 **Undergraduate Student**, University of Waterloo, Canada.  
Advisor: Stephen L. Smith  
Worked on heuristics for the Generalized Traveling Salesman Problem.
- Fall 2015 **Undergraduate Student**, *KIMIA Lab*, University of Waterloo, Canada.  
Advisor: Hamid Tizhoosh  
Worked on image compression and retrieval.

## Work Experience

- Summer 2018 **Research Intern**, *Preferred Networks*, Tokyo, Japan.
- Summer 2017 **Research Intern**, *Latent Logic (now Waymo)*, Oxford, UK.
- Fall 2016 **Research Intern**, *Amazon Search*, Palo Alto, USA.
- Winter 2016 **Software Engineer Intern**, *Amazon Advertising*, Palo Alto, USA.
- Summer 2015 **Software Engineer Intern**, *Lookout Security*, San Francisco, USA.
- Fall 2014 **Software Engineer Intern**, *Avvasi*, Waterloo, Canada.
- Winter 2014 **Software Engineer Intern**, *Achievers Inc.*, Toronto, Canada.
- Summer 2013 **Software Engineer Intern**, *pVelocity*, Toronto, Canada.

## Teaching Experience

- Winter 2023 **Teaching Assistant**, Algorithms & Data Structures (ECE 250).
- Fall 2022 **Teaching Assistant**, Probability Theory & Statistics II (ECE 307).
- Summer 2022 **Teaching Assistant**, Probability Theory & Statistics I (ECE 203).
- Winter 2022 **Teaching Assistant**, Algorithm Design & Analysis (ECE 406).
- Fall 2021 **Teaching Assistant**, Probability Theory & Statistics II (ECE 307).
- Winter 2021 **Teaching Assistant**, Algorithms & Data Structures (ECE 250).
- Summer 2020 **Teaching Assistant**, Reinforcement Learning (ECE 493).
- Winter 2020 **Teaching Assistant**, Algorithm Design & Analysis (ECE 406).

## Courses (credit or audit)

**UW (Graduate)**: Intro. to Optimization (J. Geelen), Convex Analysis & Optimization (H. Wolkowicz), Continuous Optimization (L. Tuncel), Combinatorial Optimization (C. Swamy), Functional Analysis (G. Tran), Stochastic Processes (W. Zhuang), Estimation & Hypothesis Testing (L. Zeng), Optimal Control (N. Azad), Stochastic Control (S. Smith), Model Predictive Control (Y. Pant), Computational Neuroscience (B. Tripp).

**UW (Bachelors)**: Machine Learning (P. Poupart), Pattern Recognition (A. Wong), Quantum Mechanics

(M. Reimer), Probability Theory (R. Mazumder), Robotics & Control (D. Kulic), Adaptive Algorithms (O. Basir), Computer Networks (S. Naik), Analog Communications (W. Zhuang), Analog Control (S. Smith), Compilers (V. Ganesh), Discrete Math (M. Pei).