Shubhom Bhattacharya
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EDUCATION

PhD, Electrical & Computer Engineering August 2025- present
Rice University, Houston, TX

M.Eng, Computer Science May 2020
Cornell University, College of Engineering, Ithaca, NY

B.S., Electrical & Computer Engineering December 2019
Cornell University, College of Engineering, Ithaca, NY

RESEARCH EXPERIENCE

Department of Electrical & Computer Engineering August 2025 - present
Graduate Research Assistant (PI: Dr. Nishal Shah)

- Developing neural motor decoding models and investigating closed-loop experiments

Bionic Sight LLC May 2021 - April 2025
Research Engineer (PI: Dr. Sheila Nirenberg)

- Contributed to the development of a retinal prosthetic in a clinical trial of blind patients afflicted with retinitis pigmentosa
- Designed novel clinical vision tests and analyzed patient data to determine effective treatment populations
- Developed efficient, shallow convolutional neural networks leveraging the retinal neural code

Organic Robotics Lab, Cornell University Jan 2017 - May 2020
Undergraduate Research Assistant (PI: Dr. Robert Shepherd)

- Simulated proprioceptive capabilities of afferent neural networks using artificial neural network models predicting the deformation of optical waveguides in a robotic arm within 2 cm
- Modeled the human tongue with machine learning mapping hydrogel electrochemical responses to taste-based properties

Cornell Data Science, Cornell University October 2017 - May 2019
Machine Learning Researcher (PI: Dr Thorsten Joachims, Dr. Bharath Hariharan)

- Performed comparative study of deep reinforcement learning in Atari games by reproducing state-of-the-art results for PPO, A2C and DQN algorithms (presented at 2018 CDS Symposium)
- Researched multi-agent reinforcement learning in gameplay for the Halite competition

Kippelen Lab, Georgia Institute of Technology September 2014 - December 2015
Junior Researcher (PI: Dr. Bernard Kippelen)

- Developed printable organic polymer-based solar cells performing with high quantum efficiency

- Explored flexible capacitive touchscreen displays made from organic polymers

CONFERENCE PAPERS

- Xu P., **Bhattacharya, S**., Xiao, M., Yang, H., Morton, D., Valentine, E., Shepherd, R. (2019). "Optical Sensory Networks in Soft Mechanical Composites". 22nd International Conference on Composite Materials, Melbourne, Australia.

TEACHING EXPERIENCE

Course Co-Developer and Instructor, INFO 1998 (Introduction to Machine Learning), Cornell University

- Designed projects and held office hours for an introductory Python-based machine learning course for 120+ non-STEM undergraduates

Teaching Assistant, ECE 4200 (Fundamentals of Machine Learning), Cornell University

- Graded course assignments and projects

ADDITIONAL INDUSTRY EXPERIENCE

Data Scientist, M Science LLC June 2020 - May 2021

- Performed entity extraction, anomaly detection, and automated data quality analyses on credit card data of 4 million daily users to study consumer spending for 700+ companies

VOLUNTEER EXPERIENCE

Editor, NeuroTechX Content Lab Jan 2024 - May 2025

- Edited written content and figures for neurotech newsletter for 2,000+ followers

Machine Learning Team Lead, Greenstand Oct 2019 - July 2025

- Lead group of engineers and botanists automating tree image metadata annotation for a nonprofit open-source reforestation platform
- Recipient of $24,000 AWS Imagine grant for cloud-based R&D expenditures

RELEVANT SKILLS

- **Programming**: Python for deep learning, computer vision, data science, and data visualization, R and MATLAB for data analysis and visualization, C++ for embedded device programming
- **Clinical research**: GCP and ACRP certifications
- **Software development and Big Data tools**: AWS, Apache Spark, and Git

AWARDS

- Hunter R. Rawlings III Cornell Presidential Research Scholarship ($4,000 annual need-based loan replacement and $8,000 research stipend awarded to <2% of incoming freshmen at Cornell)