

Ishan G. Kalburge

Studying the neural basis of learning & decision-making through computational decision neuroscience, applied statistics, & experimental economics.

Education

- 2020 – **The Johns Hopkins University**, Baltimore, MD.
Biomedical Engineering* (B.S.), Applied Mathematics & Statistics† (B.S.), Economics (B.A.).
Concentrations: **Biomedical Data Science*, †*Statistical Learning*.
Design Thesis: The Shapley Anything Model (ShAM): a generative approach to Shapley-based explanations
- 2016 – 2020 **W. T. Woodson High School**, Fairfax, VA.

Work & Research Experience

- Summer '23 **Research Intern**, *Gold Lab, Computational Neuroscience*, Perelman School of Medicine.
○ Psychophysics experiments for understanding information- and reward-maximizing behavior in dynamic contexts.
- Mar. '22 – **Research Assistant**, *Chib Lab, Decision Neuroscience*, Johns Hopkins School of Medicine.
○ Studying the computational basis of interoception – self-perception in motor control.
○ Designed statistical paradigm for assessing the role of psychiatric interventions in promoting physical effort during fatigue.
- Summer '22 **Research Fellow**, *Camerer Group, Behavioral & Neuroeconomics*, Caltech.
○ Developed a reinforcement-learning-based computational model of bursty behavior.
- Spring '21 – **Teaching Assistant**, *Applied Mathematics & Statistics Dept., Whiting School of Engineering*.
○ APPM 385: Numerical Linear Algebra (Spring '23).
○ APPM 310/311: Probability & Statistics for Physical/Biological Sciences & Eng. (Fall '22, Spring '21).
○ APPM 291: Linear Algebra & Differential Equations (Fall '21, Spring '22).
- Summer '19, Summer '21 **Research Intern**, *Cellular Imaging & Macromolecular Biophysics Lab*, National Institutes of Health.
○ Characterized piezoelectric properties of collagen assembly/alignment via atomic force microscopy.
- Jan. – Aug. 21 **Design Engineer**, *Center for Bioengineering Innovation & Design*, The Johns Hopkins University.
○ Prototyped insole and ankle designs for active Parkinson's Disease symptom tracking using Python & Arduino.

Skills

General	Experimental Design, AI/ML, Public Speaking, Leadership, Relationship Management
Languages	MATLAB, Python, Java, STATA, R, Excel, L ^A T _E X, CSS/HTML
Coursework (ongoing*)	Optimization I, Numerical Linear Algebra, Probability, Statistics, Dynamical Systems & Nonlinear Dynamics, Statistical Physics, Models & Simulations, Signals, Systems & Controls, Data Structures, Data Science, Econometrics, Bayesian Statistics*, Monte Carlo Methods*

Extra-curricular

- Summer '23 – **President**, *Johns Hopkins Biomedical Engineering Society (BMES)*.
- Fall '22 – **Executive Treasurer**, *Hopkins Undergraduate Society for Applied Mathematics (HUSAM)*.
- AY 2021-22 **News & Features Editor**, *The Johns Hopkins News-Letter*.

Selected Awards & Honors

- 2023 **Junior Inductee**, *Alpha Eta Mu Beta Honor Society*, awarded to top 1/5th of the BME class.
- 2022 **Junior Inductee**, *Tau Beta Pi Association*, awarded to top 1/8th of the engineering class.
- 2022 **Distinguished Service Award**, *Whiting School of Engineering*, for service to the BME department.
- 2022 **Summer Undergraduate Research Fellowship**, *Caltech*.
- 2022 **PRIMO Fellowship**, *Harvard Business School*, declined.
- 2020 **National Merit Scholar**, *National Merit Scholarship Corporation*, awarded to top 0.1% of students.