

# Ishan G. Kalburge

2828 N Calvert St.  
Baltimore, MD 21218  
☎ (571) 429-0852  
✉ [ikalbur1@jhu.edu](mailto:ikalbur1@jhu.edu)

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<sup>\*</sup> (B.S.), Applied Mathematics & Statistics<sup>†</sup> (B.S.), Economics (B.A.).  
*Concentrations:* <sup>\*</sup>Biomedical Data Science, <sup>†</sup>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.  
**Topics/Skills:** Bayesian sequential updating, PsychoPy, Prolific/Pavlovia, eye-tracking
- Mar. '22 – **Research Assistant**, *Chib Lab, Decision Neuroscience*, Johns Hopkins School of Medicine.  
○ Studying 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).
- Fall '21 **Research Assistant**, *Bader Lab, Computational Genomics*, Johns Hopkins School of Medicine.  
○ Utilized Bayesian network analysis for examining genome-wide association studies.
- 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 anklet 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<sup>A</sup>T<sub>E</sub>X.  
**Coursework (ongoing\*)** Optimization, Data Structures, Data Science\*, Econometrics, Dynamical Systems\*, Probability\*, Models & Simulations, Signals, Systems, & Controls, Numerical Methods, Statistical Physics.

## 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

- 2022 **Junior Inductee**, *Tau Beta Pi Association*, awarded to top 1/8<sup>th</sup> 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.