Souvadra Hati

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EDUCATION

Georgia Institute of Technology Aug. 2022 – Present
PhD in Computational Science and Engineering Atlanta, GA

- **Coursework**: Graduate Algorithms, Computational Data Analysis

Indian Institute of Science Aug. 2018 – Jul 2022
Bachelor of Science (Research) in Biology • CGPA: 8.4/10 • First Class Bangalore, India

- **Coursework**: Machine Learning, Data Science, Game Theory, Systems Biology, Neural Signal Processing
- **Scholarship**: Cargill Global Scholars fellow, KVPY scholar

EXPERIENCE

ATCG Lab | Computational Genomics, Indian Institute of Science Jan. 2022 – Apr. 2022
Undergraduate Researcher Bangalore, India

- Developed *MMC* toolkit, a fast and multithreaded minimizer counter, using **C++** [Link]
- Designed a parallel algorithm to sparsely sample DNA k-mers while covering all the nucleotides in the genome.
- Developed mathematical framework *minimizer*-space genome size estimation; **fastest** multithreaded pipeline

Cancer Systems Biology Lab, Indian Institute of Science Dec. 2019 – Sep. 2020
Research Intern Bangalore, India

- **Co-authored** two peer-reviewed articles in reputed journals: **Physical Biology** [Link], **Interface** [Link]
- **Best Poster** at *SMB 2021* conference for deciphering the operating principles of *circular toggle polygon* networks
- Developed **MATLAB** scripts to visualize the dynamics of complex biological networks [Link]
- Mathematical modeling of $CD4^+$ T-cell differentiation; **predictions experimentally verified** by an independent lab

International Genetically Engineered Machine (iGEM) Mar. 2019 – Nov. 2019
Hardware and Modeling team, iGEM IISc Cambridge, MA

- Awarded **gold medal** at iGEM Giant Jamboree; received iBEC grant worth **USD 13,500** by Govt. of India
- Led a team of **seven** students; built OptoMatic: **automated hardware** for creating bacterial co-culture [Link]
- Organized interactive seminars on genetic engineering for K-12 students in Bangalore and Kolkata

Gray Lab | Protein Design, Johns Hopkins University Sep. 2020 – Jul. 2021
Research Intern Baltimore, MD

- Designed a stable enzyme for in-vitro conversion of A-type to O-type blood group
- Developed a **Python** script over Rosetta for simulating elongation reactions of mucin-type glycosylation [Link]

PROJECT(S)

Head-Pose Estimation

- Developed a machine learning model using **Tensorflow** for head-pose estimation; trained and tested on 'Yale's extended dataset' [Code] [Report]

SKILLS

Languages : Python, C/C++, MATLAB, R, Java, SQL (BigQuery, Postgre), Julia
Tools : GitHub, Rosetta, PyMOL, LaTeX