

Souvadra Hati

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EDUCATION

Georgia Institute of Technology

MS / PhD in Computational Science and Engineering

Aug. 2022 – Present

Atlanta, GA

- **Coursework:** Algorithms, High Performance Computing

Indian Institute of Science

Bachelor of Science (Research) in Biology | CGPA: 8.4/10 • First Class

Aug. 2018 – Jul 2022

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

Undergraduate Researcher

Aug. 2021 – Apr. 2022

Bangalore, India

- Developed *MMC* toolkit, a fast and multithreaded minimizer counter, using **C++** [\[Link\]](#)
- Developed a mathematical framework for *minimizer*-space genome size estimation; **fastest** multithreaded pipeline

Gray Lab | Protein Design, Johns Hopkins University

Research Intern

Sep. 2020 – Jul. 2021

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 [\[Link\]](#)

Cancer Systems Biology Lab, Indian Institute of Science

Research Intern

Dec. 2019 – Sep. 2020

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)

Hardware and Modeling team, iGEM IISc

Mar. 2019 – Nov. 2019

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

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, Shell

Tools : GitHub, Rosetta, PyMOL, \LaTeX