

# Souvadra Hati

☎ +1-4709290024 | ✉ souvadrahati@gatech.edu | 🔗 souvadra.github.io | 🌐 souvadrahati

## EDUCATION

### Georgia Institute of Technology

*PhD in Computational Science and Engineering*

Aug. 2022 – Present

Atlanta, GA

- **Coursework:** Grad Algorithms, Grad Machine Learning

### 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, Neural Signal Processing
- **Scholarship:** Cargill Global Scholars fellow, KVPY scholar

## EXPERIENCE

### ATCG Lab | Computational Genomics, Indian Institute of Science

*Undergraduate Researcher*

Jan. 2022 – Apr. 2022

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

*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<sup>+</sup> 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

### 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 [\[Link\]](#)

## 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