Swethasree Bhattaram
PhD Student - School of CSE @ Georgia Tech
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Research Interests

As a part of a high performance computing focused research group, my interests lie in parallel algorithms. My current work involves parallelization and optimization of formulations that solve Optimal Transport, a mathematical framework to compare and manipulate probabilistic distributions.

Education

- **Georgia Institute of Technology** — Atlanta, GA
  Doctor of Philosophy School of CSE. Advised by Prof. Srinivas Aluru. — *2023 – Present*
- **Georgia Institute of Technology** — Atlanta, GA
  Masters of Science in Bioinformatics. Advised by Prof. Rishikesan Kamaleswaran — *2021 – 2022*
- **University of Illinois at Urbana-Champaign** — Champaign, IL
  Bachelors of Science in Bioengineering. — *2017 – 2021*

Work Experience

- **Georgia Institute of Technology** — Atlanta, GA
  Graduate Researcher — *Jan 2023 – Present*
  - **Advisor**: Dr. Srinivas Aluru
  - **Work**: Parallelizing/Optimizing Wasserstein and Gromov Wasserstein solutions of Optimal Transport – The applications of these algorithms is for faster analysis of extremely large biological datasets
  - **Skills**: MPI, OpenMP, C++, Python
- **University of Maryland School of Medicine (UMDSoM)** — Baltimore, MD
  Bioinformatics Research Intern — *May 2022 - August 2022*
  - **Area**: Computational Transplantation Biology.
  - **Advisor**: Prof. Valeria Mas
  - **Work**: Implemented methods that use Logistic Regression and Naive Bayes to analyze and identify patterns of changes in DNA Methylation, RNA-Seq, and ATAC-seq datasets of liver and kidney transplant tissue cells that represent organ rejection
  - **Skills**: Python, R
- **Georgia Institute of Technology** — Atlanta, GA
  Graduate Researcher — *March 2022 - August 2023*
  - **Area**: Computational Genomics.
  - **Advisor**: Dr. Srinivas Aluru and Dr. Manoj Bhasin.
  - **Projects**:
    - Implemented network analysis using NetworkX to develop an accurate biomarker panel to identify nonmalignant/malignant PDAC cells using multi modal single cell data
    - Collaborating with researchers working on identification of early stage PDAC with radiological and histopathological images using CNNs to correlate sequencing data patterns with image identification patterns.
  - **Skills**: Python
- **Georgia Institute of Technology** — Atlanta, GA
  Graduate Researcher - Masters — *July 2021 - December 2022*

- **Area**: Clinical Informatics.
- **Advisor**: Dr. Rishikesan Kamaleswaran .
- **Projects**:
  - Developing a natural language pipeline that identifies the similarities between doctors' notes, to enhance the accuracy of the the diagnosis of ARDS
  - Identification of Sepsis Severity and Sepsis Trajectories in Patients of Diverse Groups
- **Skills**: Pytorch, spaCy, NLTK

- **Optum** Schaumburg, IL
  Software Engineering Intern *May 2021-August 2021*
  - **Projects**:
    - Developed a back end pipeline that processes various consumer requests from pharmacies
    - Built a tool for Optum organizations to internally share confidential information from patients and business clients
  - **Skills**: Python, Javascript, React

Relevant Graduate Coursework

High perfomance computing, Artifical Intelligence, Multivariate Statistic Analysis, Machine Learning Biosciences, Computational Genomics

Relevant Skills

Python, C++, R, MPI, OpenMP, Pytorch, spaCy, NLTK