Vedavyas Mallela

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Education

Georgia Institute of Technology Atlanta, GA

Bachelor of Science, Computer Science ***Expected May 2025***

- Intelligence and Theory Threads
- Relevant Coursework: **Data Structures and Algorithms**, Design and Analysis of Algorithms, Introduction to Artificial Intelligence, Object-Oriented Programming
- Extracurricular Activities: Data Science at GT, AI + Medicine Society

Experience

Research Assistant September 2022 - Present

College of Computing, Georgia Institute of Technology *Atlanta, GA*

- Collaborated with esteemed researchers at the Center for Research into Novel Computing Hierarchies (CRNCH) to develop cutting-edge web tools for the Future Computing Rogues Gallery VIP program, driving advancements in high-performance computing and experimental computing methods.
- Designed the CRNCH Lab website (sites.gatech.edu/crnch) showcasing the lab's research, as well as the Rogues Gallery Website (gt-crnch-rg.github.io/fc-with-rg-vip/).
- Facilitated research summit with talks from over 30 leading researchers and over 500 attendees.

Research Intern August 2020 - December 2022

MIT Computer Science and Artificial Intelligence Laboratory *Cambridge, MA*

- Optimized computer vision segmentation algorithms and software which helped over 3,000 neuroscientists model brain structures and neurological pathologies for clinical research studies.
- Contributed to the development of BrainPainter, a brain visualization software, in collaboration with neuroscientists at the Medical Computer Vision group. Enhanced the application to meet their unique requirements, resulting in improved accuracy and user satisfaction. Responsible for maintaining project servers on the MIT.edu domain. (brainpainter.csail.mit.edu)
- Created a 3D mouse brain visualization tool using the Blender graphics API and Harvard Freesurfer. First authored research paper.

Research Intern April 2021 - August 2022

Harvard University Visual Computing Group *Cambridge, MA*

- Conducted research on binary tree visualization and comparison for medical applications. Optimized tree clustering tools and implemented a zhang-shasha edit distance metric.
- Leveraged d3.js visualization and Python libraries to perform complex medical computations for cell data comparison, serving as the full stack developer for the project and writing the entire codebase.

Research Intern May 2020 - March 2021

Stanford University Electrical Engineering Department *Stanford, CA*

- Developed COVerage, a website that displays region-specific news about SARS-CoV-2 using a novel query algorithm, and wrote over 15,000 lines of code as an intern in the STEM2SHTEM program at the Stanford Compression Forum.
- First-authored paper demonstrating our innovative approach to COVID news delivery resulting from our research.

Projects

BrainPainter | *Flask, TKinter, Docker, NumPy, PyTorch, SciPy* August 2020 – December 2022

- Contributed to MIT CSAIL's BrainPainter software for visualizing brain structures and biomarker data, adding viewing angles, left hemisphere visualization, and mouse brain visualization
- First Authored paper on contributions to BrainPainter and made the code available at github.com/razvanmarinescu/brain-coloring. Demonstrated the software's capabilities by providing a web app.

Technical Skills

Languages: Python, JavaScript, Java, C++, C, HTML/CSS
Frameworks: Flask, Angular, BootStrap
Developer Tools: Git, Anaconda, VSCode, Docker, Firebase, Figma, Postman, JUnit
Libraries: Numpy, Scipy, PyTorch, Blender, Node.JS , Piling.js