Ayati Sharma

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Education

University of California, Berkeley **GPA: 3.85**

B.A. Computer Science, B.A. Linguistics *May 2025*

- **Honors**: EECS Honors Program: Concentration in Comp. Neuroscience, Upsilon Pi Epsilon (CS Honor Society), Junior Researcher at The New York Academy of Sciences, Honors to Date Fall '22 & Spring '22, RTC Member
- **Courses**: Database Systems, Data Structures & Algorithms, Engineering Optimization, Data Science, Computer Architecture, Full Stack Development (Frontend/Backend), Multivariable Calculus, Linear Algebra, Discrete Math & Probability Theory, Circuit Design & Theory, Linguistic Science, Molecular Therapeutics

Experience

Berkeley Speech Group at Berkeley Artificial Intelligence Research (BAIR) Berkeley, CA

Undergraduate CS Research Assistant *August 2023 - Present*

- Developing machine learning algorithms for spoken language assistive technology.

iSono Health (YC W16) South San Francisco, CA

ML/Software Engineering Intern *May 2023 - Aug 2023*

- Designed & developed software pipeline for patient data organization for use in clinical support. Increased efficiency by 4x. Developed & trained ML triage models for breast cancer risk classification using BI-RADS.
- Designed prototype & built Flask + Dash based web app for breast imaging annotation & interfacing with medical imaging software

UC Berkeley EECS Department Berkeley, CA

Head Teaching Assistant, TA, Tutor, Academic Intern – CS 61B: Data Structures & Algorithms *Jan 2022 – Present*

- Organizing course logistics through heading exam creation, managing proctoring & grading, content evaluation, lecture & student support. Conducting weekly office hours & forum for debugging & conceptual issues, directing review sessions for class of 1700+ students. Improving internal project test guides and developing project software.

The Conboy Lab at Berkeley Engineering Berkeley, CA

Software Development Intern *March 2023 - Present*

- Developing a data processing pipeline to conduct health assay analysis regarding aging.

Computer Science Mentors Berkeley, CA

Senior Mentor - Data Structures and Algorithms *August 2022 – Present*

- Leading weekly tutoring and review sessions of 4-5 students with minilectures and problem-based worksheets. Concepts taught include asymptotic analysis, data structures, sorting and search algorithms. Teaching the women's affinity section. Advising junior mentors on pedagogical techniques weekly through direct feedback, leading structured workshops, section shadowing. Organizing and conducting exam-review sessions for 1700+ students.

Projects

CheRMiT (Machine Learning Research in Computational Biology at Berkeley iGEM) *Jan 2022 - Present*

- Collaborating to develop a natural language processing pipeline that extracts chemical reaction data from scientific literature using few-shot learning on GPT and validates reactions through cheminformatics.

Gitlet *April 2022*

- Developed a version-control system in Java. Utilized cryptographic hashing, file persistence, regex, optimised data structures, and graph traversals.

Enigma *February 2022*

- Developed a digital version of the Enigma encryption machine using object-oriented design, file I/O, string manipulation enabling encryption/decryption of messages with various possible initial configurations of the machine.

Publications

Common Genetic Signatures of Alzheimer's in People with Down syndrome *July 2019 – Nov 2020*

- Paper accepted and presented at the Federation of European Neuroscience Societies (FENS) Forum 2020. Co-authored as a genomics and data science research assistant to Dr. Anna Delprato & Dr. Wim E. Crusio. [Paper]

Skills

Languages: Python, Java, C, PyTorch, SQL, PostgresQL, NoSQL, JavaScript, RISC-V, HTML/CSS, Scheme

Tools & Frameworks: Git, DVC, Docker, Airflow, Unix, MongoDB, Dash, Flask, Bootstrap, React Native, Pandas, NumPy, Plotly, scikit-image, scikit-learn, ITK-Snap, Figma