

ROHAN CHHAYA

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An aspiring engineer with interests in software engineering, biotechnology, machine learning, and financial technology

EDUCATION

University of Pennsylvania | Philadelphia, PA Graduation: May 2024
Bachelor of Science in Engineering: Bioengineering GPA: 3.93

Minor: Computer & Information Science, Mathematics

Relevant Courses: *Data Structures & Algorithms, Discrete Math, Probability, Networks, Biosignal Analysis, Diff Eq. I + II, Biomodeling*

Semester Abroad at **ETH Zürich**, Relevant Courses: *ML in Genomics, Quantum Information, ImmunoEngineering, Biofluid Dynamics*

Master of Science in Engineering: Data Science Graduation: May 2024
Teaching Assistant for CIS5200: Machine Learning Theory GPA: 4.00

Relevant Courses: *Advanced Statistics, Machine Learning Theory, Graph Neural Networks, Applied Probability Models, Big Data*

PROFESSIONAL EXPERIENCE

MongoDB | New York City, NY – *Software Engineering Intern, Database Experience* June 2022 – August 2022

- Constructed a new API endpoint for async event monitoring for the Swift driver (MongoSwift) to replace 20+ lines of client code
- Converted the Swift test runner from synchronous to fully async/await operations to improve transactions testing
- Awarded the Green Award for comparing energy efficiencies of MongoDB drivers & featured on the MongoDB [blog](#) + [podcast](#)
- Addressed 13 minor bugs/Jira reports for internally- and user-requested fixes and improvements to MongoSwift and SwiftBSON

University of Pennsylvania Farah Lab of Neuroscience | Philadelphia, PA – *Research Assistant* December 2021 – Present

- Applied supervised ML (GBRTs, SVMs, neural nets) and statistical analyses of symptom and MRI data from the UK BioBank (40,000+ samples) to quantify differences in depressive phenotypes and metabolic effects among socioeconomic statuses (SES)
- Lead co-author “Atypical Depression Disproportionately Afflicts People of Low SES via Metabolic Pathways” (APS, under review)

SBA Communications | Boca Raton, FL – *Software Engineering Intern, Business Intelligence* May 2021 – January 2022

- Built an Android app from scratch to scan for Bluetooth devices & migrate data using custom Node.js/Azure cloud backend
- Optimized 15 SQL queries and enhanced data visualization by integrating Python to plot ideal cell tower locations on a GIS map

Edily Learning | San Francisco, CA – *Learning Team Intern* May 2021 – August 2021

- Formulated a custom JSON data structure to organize videos on the backend and conducted a literature review of 50+ papers

EXTRACURRICULAR ACTIVITIES & LEADERSHIP

Penn Labs | Philadelphia, PA – *Android Team Lead* January 2021 – Present

- Lead a team of 6 developers to improve PennMobile on Android, including interactive polls, notifications, and dining analytics
- Support 800+ users (DAU) by addressing 14 user complaints regarding offline components, caching, and 2-factor authentication

Penn ADAPT | Philadelphia, PA – *Medical Device Engineer* September 2020 – Present

- Formulate solutions to medical device needs in the Philadelphia area, including low-cost prosthetics & wearable thermometers
- Enhanced real-time detection of breathing abnormalities through data modeling & computer vision (CNNs and GANs)

Penn for Youth Debate | Philadelphia, PA – *Assistant Speech Coach* September 2020 – Present

- Coach and mentor Longstreth Elem. and Robeson HS speech & debate students, and judge on various circuits (NSDA, NCFE, etc.)

PROJECTS

- GymTracker: Logging and visualizing progression on the major powerlifting lifts via Atlas Charts and server-side Swift (solo)
- Brady Number: Calculating the degrees of separation between any two active NFL players (group of 3)
- BlockPenn Rewards: Detecting efficient energy use in a household via Arduino/Python and rewarding efficient users (group of 5)
- Minigames: Planetary Destroyer (Swing), Alien Invaders (Pygame), Hangman (Python), Go Fish (Java), Paint (OCaml) (solo)

SKILLS & AWARDS

Languages/Tools

- Languages: Python, Java, Swift, JavaScript, SQL/NoSQL, MATLAB, Kotlin, Node, Ocaml, C#, Go, C++, Arduino, BASIC (fast learner)
- Tools: Git, PyTorch, Pandas, Spark, Azure, AWS, Firebase, MongoDB, HTTP, sh, Django, CI/CD, Docker, Android Studio, Jira

Technical

- Proficient in Solidworks, AutoCAD, BIOPAC, BLAST, OnShape, Fusion360, TinkerCAD, ImageJ/Fiji, Excel
- Experienced with lab techniques (electrophoresis, transfection, dissection, etc.) & physical computing (microcontrollers, etc.)

Interpersonal

- Strong communicator: experience with public speaking & scientific presentation, bilingual, clarinet & speech/debate instructor

Awards

- Finalist at 2020 Regeneron ISEF (International Science & Engineering Fair)
- 4th Place at 2020 Harvard National Forensics Tournament in extemporaneous speaking
- Eagle Scout (Eagle Project: Collected 400+ books in Indian languages to jumpstart a new language section at the local library)