

## ROHAN CHHAYA

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A determined engineer with interests in software engineering, ML/AI, cloud, and biotechnology

### EDUCATION

#### University of Pennsylvania | Philadelphia, PA

##### Master of Science: Data Science

Graduation: May 2024

Teaching Assistant for CIS5200: Machine Learning and CIS 3500: Software Engineering

GPA: 4.00

Relevant Courses: *Statistics, Math Behind ML, Graph Neural Networks, Applied Probability Models, Big Data Analysis, Image Analysis*

**Semester at ETH Zurich**, Relevant Courses: *Non-convex Optimization, Machine Learning for Genomics, Computational Fluid Modeling*

##### Bachelor of Science in Engineering: Bioengineering (Summa Cum Laude)

Graduation: May 2024

**Minor:** Computer & Information Science, **Concentration:** Biomedical Data Science & Computational Medicine

GPA: 3.93

Relevant Courses: *Data Structures & Algorithms, Functional Programming, Software Engineering, Networks, Diff. Equations I + II*

### PROFESSIONAL EXPERIENCE

#### Talroo | Austin, TX – Associate Software Engineer

July 2024 – Present

#### Ginkgo Bioworks | Boston, MA – Software Engineering Intern, Digital Technology

June 2023 – August 2023

- Developed an end-to-end solution for biologists to mark certain DNA sequences as controls, trace them throughout the design and ordering process, and deliver data to analytics teams via new API endpoints (featured on the company [blog](#))
- Achieved 80% accuracy and a 3x speedup in DNA buildability prediction runtime with machine learning & LLMs (e.g. HyenaDNA)

#### 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 that replaced a 20+ line client-side operation
- Addressed 13 minor bugs/Jira reports for internal async testing optimizations and user-requested bug fixes to the driver

#### University of Pennsylvania Farah Lab | Philadelphia, PA – Computational Research Assistant

December 2021 – May 2023

- Applied supervised ML (GBRTs, SVMs, neural nets) and statistical analyses of symptom and MRI data from the UK BioBank to quantify differences in depressive phenotypes and metabolic effects among socioeconomic statuses (SES)
- Lead co-author of “Atypical Depression Disproportionately Afflicts People of Low SES via Metabolic Pathways” (APS, 2023)

#### 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, created an API to send data to Azure, and analyzed via Python

### PROJECTS

**Epilog:** Built a headband with EEG electrodes to detect non-convulsive seizures using ML, Bluetooth, and Arduino (group of 5, [video](#))

- Designed a prediction API (via Django) with an ML algorithm to calculate seizure probability (spec = 0.88, sens = 0.95)
- Built a mobile application to connect to the prediction API and provide low-latency, easy-to-use data to caretakers

**PennMobile Android:** Served as Team Lead (2022-24) for Penn’s main app that students use to interact with campus (via [Penn Labs](#))

- Implemented features including interactive posts and polls, laundry notifications, dining analytics
- Led 6 developers and oversaw a 17% increase in daily active users to 800+ by addressing complaints regarding stale data

**Axon Avengers:** Predicted flexion angles for multiple fingers from multiple subjects using time series ECoG data

- Implemented software filtering, feature engineering, and ensembling of regression models for optimal performance

**FIFAnalysis:** Analyzed the Denmark v Tunisia matchup in the 2022 FIFA World Cup using ML and data visualization

- Focused on expected goals (xG), shots on goal, penetrating passes, game phases, and set pieces

**GymTracker:** Created a web app for logging and visualizing powerlifting progress via Atlas Charts, written entirely in server-side Swift

**Arm-Wrestle Mania:** Designed a remote arm wrestling game with bicep flexion, EMG filtering, Bluetooth, and a PyQt UI

**Healthy or Not:** Predicted the “health score” of a food based on ingredients and macronutrients with supervised machine learning

### SKILLS & AWARDS

#### Technical

- Languages: Python, Java, JavaScript (+ TypeScript, React.JS, Node), MySQL/NoSQL, Go, C#, HTML/CSS, Kotlin, Swift (fast learner)
- Tools: Git, AWS, Django, Pandas, Spark, Torch, Scikit-learn, Docker, Azure, Android/iOS, REST, GraphQL, MongoDB, CI/CD, Agile
- Experienced in physical computing (Arduino, IoT, etc.), modeling software (SolidWorks, Excel, ITK-SNAP, etc.), and lab protocols

#### Interpersonal

- Strong communicator: trilingual and experience with public speaking, poster presentations, and teaching (math, speech, music)

#### Awards

- Penn Engineering 2024 Technology and Innovation Award (chosen from 100+ senior design projects by 50 judges)
- Penn Bioengineering 2024 Senior Design Competition Winner
- Finalist and Top 6 Finisher at University of Minnesota 2024 Emerging Medical Valuation Competition
- Poster Finalist at 2024 Summer Biomechanics, Bioengineering and Biotransport Conference (SB3C) Design Competition
- 2022 MongoDB Green Award (Project: comparing energy efficiencies of MongoDB drivers, featured on company [blog](#) + [podcast](#))
- Finalist at Regeneron ISEF (International Science & Engineering Fair)
- Eagle Scout (Eagle Project: Collected 400+ books in Indian languages to jumpstart a new language section at the local library)