Pranav Ramachandra

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Education

University of California, Berkeley **Dec. 2024**

B.S. Chemical Engineering, Minor in Data Science

Coursework: Data Structures/Algorithms, Intro to Machine Learning, Principles and Techniques of Data Science, Quantum Mechanics, Transport Phenomena, Bioinformatics, Data Mining, Probability & Discrete Math

Experience

QuantumScape | *Software Engineering Intern* **May 2024 – Aug. 2024**

- Built a CNN with PyTorch detecting anomalies in cell testing with 95% accuracy saving $50,000 annually
- Increased defect detection TPR by 15% by developing tool-metrics pipeline w/ Google Cloud & PostgreSQL
- Saved $1,000/day & reduced third-party inference API calls by developing an in-house-API using ClearML

Tesla | *Data Science & Cell Engineering Intern* **Jan. 2023 – Aug. 2023**

- Developed a defect classification pipeline using physics-based models from cell formation with 98% accuracy
- Proposed 'formation-less' cells from A/B testing and experimental trials; predicted savings of over $1.2M/day
- Reduced time of cell formation by 5% using electrochemical experiments & analysis, saving $300,000 per day

Lawrence Berkeley National Laboratory | *ML & Chemistry Researcher* **Sep. 2021 – May 2024**

Advisor: Professor Bryan McCloskey

- Using regression on time-series data studying pulse-formation on Li-ion batteries, reducing Li-loss by 50%
- Investigated effects of silica-doped electrolytes in batteries; saw 20% decrease in impedance growth in cycling
- Engineered a custom battery to increase NMR signals in electrolyte solutions by >5x; studied H2 evolution

Amazon Web Services | *Contract Software Developer* **Sep. 2022 – Mar. 2023**

- Developed dashboard for Telco companies to study factors contributing towards their total cost of ownership
- Engineered a web application for AWS employees to input customer needs and server sizes of cloud models
- Created an API + dashboard connecting backend database & algorithm calculations; saved financials

Chevron | *Process Engineering Intern* **May 2022 – Aug. 2022**

- Designed lab-scale lubricant blender reducing scale-up and R&D costs by $900,000+/day & 90% of waste
- Reduced product cost by developing PFDs with customers & vendors; Reduced fluid drag to laminar flow
- Resolved foaming-issue for lubricant package from external vendor, saving $2.2M lubricant package purchase

Projects

SquatBuddy: Computer Vision Workout Assistant | *Python, TensorFlow, React* **May 2024 – Pres.**

- Developed an image-model w/ TF and web-app using Flask detecting user-errors when barbell-squatting
- Created CV model w/ transfer learning, combining Google's PoseNet and ImageNet to develop image model

Workout Logger, Tracker, Web App & API | *Python, MySQL, React, Heroku* **Dec. 2023 – May 2024**

- Developed a web application using a Flask backend and MySQL for users to remotely store workout data
- Implemented a RESTful API, custom data structures, and regression model to predict best workout for user

Extracurriculars

Innovate@Berkeley | *Lead Coordinator* **Sep. 2022 – Dec. 2022**

- Lead 10 people to host UC Berkeley's biggest startup event, hosting 30+ companies & 10+ VC speakers
- Ran pitch challenge with 20+ participants; hosted 400+ people; lead marketing campaigns/outreach events

UC Berkeley Student Learning Center & Wyzant | *Academic Tutor* **May 2020 – May 2022**

- Increased exam scores by 10% for students studying linear algebra and differential equations at UC Berkeley
- Taught 10+ high school students AP Physics, Calculus, and Chemistry; increased exam scores by 15%

Skills & Interests

Skills: Python (PANDAS, Scikit-learn, PyTorch), Java, MySQL, Docker, React, Kubernetes, Google Cloud
Interests: Running, Weight Lifting (Leg Day), Making Stews, Chicago Bulls, Environmental Justice, Djing