Pranav Ramesh

Education

Harvard University

Expected May 2026 Cambridge, MA AB in Computer Science, AB in Statistics, SM (Concurrent Masters) in Computer Science; Cumulative GPA: 3.88/4.0

- Coursework: Artificial Intelligence, Computing Hardware, Data Science (Graduate Level), Data Structures & Algorithms, Discrete Mathematics, Formal Security Methods, Probability, Linear Algebra and Real Analysis I, Machine Learning, Statistical Inference, Systems Programming & Machine Organization
- Extracurricular Activities & Leadership: Harvard Computer Society, Harvard Tech for Social Good (Senior Software Engineer), 2022 Coca-Cola Scholar

Experience

Harvard University

Computer Science Teaching Assistant

- Teaching Assistant for CS 32 Computational Thinking and Problem Solving under Michael Smith (Spring 2024).
- Teaching Assistant for CS 20 Discrete Mathematics under Dr. Rebecca Nesson (Spring 2023, 2024).

Matanataki

Senior Software Engineer (Contract)

- Led product and engineering development for a team of 4 software engineers to create a web platform for waste management in Fiji using React.
- Created project roadmap, designed initial product wireframes, coordinated meetings with our client, and conducted code reviews through pull requests.

Harvard Programming Languages Group

Undergraduate Researcher

- Researched formal verification for large language models (LLMs) under Professor Nada Amin in the Program for Research in Science and Engineering.
- Improved theorem generation using decomposition and developed a Python LLM plugin to refine LLM-generated Coq proofs using verification.
- Fine-tuned Seq2Seq Transformer LLM model using C++ and Python to generate Coq tactics from previous tactics and desired goal to write proofs.

City of Boston

Senior Software Engineer (Contract)

- Led a team of 3 software engineers to create a React (JavaScript) web app to provide visualizations and insights regarding spending in the City of Boston.
- Created front-end data visualizations through Python and set up backend API requests in Django.
- Attracted 5,000+ visitors; led to an increase in citizen engagement by 30% compared to the prior engagement tools utilized by the city.

OkavSo

Software Engineer (Contract)

- Developed a React (JavaScript) web portal for experts to answer anonymous users' questions regarding identity, relationships, mental health, etc.
- Constructed real-time chat messaging framework (0.5-sec latency). Built Express is backend and implemented all API endpoints for application.
- Contributed to a 300% increase in user retention and a subsequent growth in the number of experts participating in the platform by 200%.

Projects

Predicting F1 Season Winners from Preliminary Race Data

- Developed an ensemble of models using Python and Scikit-Learn to predict F1 season winners based on the results from the first three Grand Prix races.
- Performed data wrangling and feature engineering to derive features for prediction, and used feature importance to select most important predictors.
- Used XGBoost classifier to produce better prediction AUC scores, alongside cross-validation, and addressed class imbalance using SMOTE.

Classig (Fast Harvard Course Search Tool)

- Webscraped ~9000 courses using Selenium. Implemented lightweight fuzzy-search and queried courses from an in-memory cache (avg 0.32 ms latency).
- 4000+ active users, 40k+ total page visits (50% of Harvard College campus). Full stack developed on Next.js (React/JavaScript).

Pillar (AI-Powered Prescription Tracking Platform)

- Used OCR to capture prescription label details from photos and set user reminders to take their pills and refill prescriptions. Built app using SwiftUI.
- Fine-tuned BERT transformer model in Python on custom-made label data (98% accuracy) and implemented fuzzy-search to capture medication info.

Awards

Best AI Hack @ Stanford TreeHacks

- Created Synthesis, a reimagined, AI-powered news experience that provides a personalized, unbiased view of aggregated topics in the news.

3rd Place Citadel Correlation One Summer Datathon Winner

- Developed a prediction model in Python to estimate Delta Airlines' quarterly closing stock price from 2010-2019 based on market factors (99% accuracy).

1st Place Moonbeam Winner in Polkadot x EasyA @ Harvard Hackathon

- Built Oasis, a decentralized social media platform built using React and web3 technologies that rewards users for sharing their thoughts anonymously.
- Token payout system built on Moonbeam staking DAO incentivizes members to wager on the popularity of their post.

Skills and Interests

Languages: English, French, Hindi, Tamil Programming Languages: C/C++, Django, Flask, HTML, Java, JavaScript, Node.js, Python, React, Swift, Tailwind CSS, TypeScript Interests: Tennis, Piano, Pool, Photography, Drone Cinematography

August 2023

December 2023

June 2023

February 2024

August 2023

June 2023

January 2023 - Present

September - December 2023

Cambridge, MA

Cambridge, MA

June - August 2023

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January - May 2023

September - December 2022

Cambridge, MA

Cambridge, MA