Rohan Jhunjhunwala

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EDUCATION

University of California, Berkeley — Bachelor of Science, *Electrical Engineering and Computer Science*

Intended Graduation Date: Spring 2020

EXPERIENCE

Penn Medicine— *Research Intern*

Assisted a nuero-radiologist in order to build a model of brain temperature based on DTI data and also worked in data entry for a longitudinal study on Parkinson's disease. Part of the training included HIPAA compliance and a discussion of ethical processing of patient data.

FIRST Robotics Team 1168 — *Chief Operating Officer*

Led FRC team 1168 to its first championship banner in its 14 years by writing software for tele-operated and autonomous navigation and supervising team logistics, including starting our first-ever off-season training sessions.

PROJECTS

NASA Space Apps Challenge: Global Judging Nomination

Collaborated on both an interactive phone-bot using Twilio's a natural language processing API and a website to improve our response to disasters (DiBot.ml). Helped different parts of our project communicate with one-another through RESTful architecture.

Y-Combinator Hackathon - Encryption Accessibility Aid

Within 24 hours, learned fundamentals of Python Flask and web architecture to build a Web API, which allowed clients to verify an RSA signature against a public key. Concurrently, assisted on a pair of projects. One used OpenCV and a convolutional neural network to automatically output HTML from a website sketch, and one counted cells from a microscope image.

Dynamic Programming, Bellman Equation

Implemented a dynamic programming solution which would use Bellman's equation to create a near-optimal strategy to the given non-deterministic game of imperfect information. The bot ranked 11th against a competitive group of 124 others.

Minimax AI with Alpha-Beta Pruning

Wrote a pure Java (no libraries) implementation of a minimax AI, which would play Chess and other deterministic games (Reversi, tic-tac-toe, etc...) by solving out a game tree out to a finite depth.

Programming Language, Interpreter, and Extensible, Integrated Development Environment

Wrote a fully-functional interpreter for a "Turing-Complete" language of my own design, and co-wrote a set of packaged development tools to allow users to work with this language and other community-built "esoteric languages".

3D Graphics Engine

Wrote a pure Java implementation of a 3D rendering engine where the camera has all six necessary degrees of freedom along with code to provide varying scenery, including procedurally generated terrain (perlin noise).

Gesture-Based Playlist Controls

Within a 36 hour Hackathon (PennApps), co-built a system to allow a user to control a Spotify Playlist with a number of gestures, and built an LED Glove to sync to the beat of the song being played.

Objective

Cooperatively leverage existing computational technologies to disrupt a variety of fields ranging from the humanities (quantitative finance, or digital arts/music), to "STEM" fields like process automation and computational biology.

Technical Coursework (Past + Upcoming)

- Designing Information Devices and Systems I
- Data Structures (Java)
- Discrete Mathematics and Probability Theory
- Designing Information Devices and Systems II
- Structure And Interpretation of Computer Programs (Python)
- Great Ideas in Computer Architecture (C, RISC-V)
- Principles and Techniques of Data Science (Python, SQL)

Skills

Operating Systems: OS X, Linux, Windows, Embedded Systems (Exploring)

VCS: Git (Shell)

Rapid Prototyping: STL, G-Code, AutoCAD, familiar with SVGs for laser-cutting

Data Entry: Familiarity with the REDCap database management tool. Statistical analysis of data.

Languages

Java (3 years)
Python (~1 Year)
Arduino "C++" (Exploring)
HTML/CSS (Exploring)

Interests/Hobbies

Distance Running
Puzzling
- Code-Golf (Shortest-Code Challenges)
- Recreational Mathematics
- Board Games and Game Theory