Arpan Kaphle

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EDUCATION

Massachusetts Institute of Technology Cambridge, MA (2017-2022)

Major: Computer Science and Physics B.S, Computer Science Masters in Engineering

Relevant Classes: Machine Learning and AI, Computational Structures, Internet of Things, CS Math, Algorithms, Software Construction, Computer Systems, Computational Cognition, Distributed Computing, Quantum Mechanics, Special Relativity, Inflation

Science Engineering Magnet High School Dallas, TX (2013-2017)

Relevant Classes: AP Computer Science A, Advanced Web Programming, 2-D Animation Game Programming

EXPERIENCE

Alphabet - Google *Mountain View, CA*

Software Engineer *August 2022 – Present*

- Successfully productionized Jetpack authentication flows to surface passkeys on the Android OS, a new form of credentials.
- Successfully designed and implemented metrics system to analyze passkey flows and adoption.
- Successfully generated various full stack sample applications that showcase to partners how to utilize our new passkey flows.

Massachusetts Institute of Technology and Cadence Design Systems 6A Fellowship *Burlington, MA*

MIT 6A Fellow - Masters in Engineering – Machine Learning Research *June 2021 – Present*

- Successfully generated Monte Carlo Tree Search system in Java with various reinforcement learning augmentations applied to a novel field. Thesis available on MIT DSpace.

Amazon *Seattle, WA (Virtual)*

Software Development Engineer Intern in Prime Video Recommendations *June 2020 – August 2020*

- Researched and designed entire system and fully implemented code to be modular and well documented for the next engineer to maintain, and handed off at the end successfully, with approval from rest of team on all aspects of design and creation
- Successfully created a provider for team's machine learning platform using Java (w/ many modules), AWS (CDK)
- Successfully integrated multiple other team's software and dependencies, through inter-team technical communication
- Crafted team approved design patterns, using abstract data types, immutability, and safe code, with extensibility

Brain Power *Cambridge, MA*

Software Development Intern – Sensor Software for Combatting Autism *January 2019 – August 2019*

- Successfully researched and designed one of the company's first ever complete Unity C# Modules, documented and modularized for future engineers.
- Completed extensive cost analysis and performance testing, ensuring Google Glass performed well and cost of data was cheap.
- Fully created prototype "code journaling" debug application with other winter interns using the C# reflections class
- Successfully prototyped Augmented Reality game meant to comfort autistic children in a new environment, creating 3D AR spheres for 3D images that allowed portals between rooms – involved quick JSON parsing from backend

Buddi *Cambridge, MA*

Founding Software Development Engineer – Mental Health Startup in DeltaV *September 2017 – December 2018*

- Successfully created Android and iOS apps with Java and Swift for use by IRB study participants to collect data for R&D.
- Created the entire backend in Python for the app for the IRB research study– was first author for BMES poster.
- Successfully created the Java client backend to analyze Android OS level data, merged Java into React native, and migrated backends from Python Flask to Javascript Node.

- Implemented Tensor flow and Keras to create an emotion recognition CNN using RESNET and a Chabot based on a seq2seq model

SKILLS

Programming and Other Computer Skills: Java, Python, C++, C#, JavaScript, Flask, React Native, Unity, Node, Ubuntu Terminal, Swift, Tensorflow (Keras), Amazon Web Services + CDK, HTML, Django, CSS, Spring, Guice

Spoken Languages Known: English, Nepalese, Japanese, and Spanish

Leadership: President MIT Unmanned Aerial Vehicles Team (2020), Webmaster MIT Intl. Students Association (2020)