

# Atiya Kailany

SOFTWARE ENGINEER

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## Education

### California State University, East Bay

San Francisco Bay Area

M.S. IN COMPUTER SCIENCE, 3.87 GPA

Aug. 2020 - May. 2022

- Researching a Pyramid Network to develop an object detection model for aerial imagery. The model is implemented on top of Keras's framework and is intended to work on-board UAV's, specifically drones, and detects urban artifacts such as pedestrians, buses and cars... etc.

### New Mexico State University

Las Cruces, NM

B.S. IN COMPUTER SCIENCE, 3.6 GPA

Aug. 2017 - Dec. 2019

- Studied on a Hadley Full Ride Scholarship, Crimson Scholar, Meritorious Scholar (Top 10%) and Honors graduate.

### Arrowhead Park Early College High School

Las Cruces, NM

ASSOC. OF SCIENCE, ASSOC. OF ARTS, HIGH SCHOOL DIPLOMA, 3.98 GPA

Aug. 2014 - May. 2017

- Graduated as a Dual Credit student with two years worth of college credits.

## Experience

### Qualcomm

San Diego, CA

CAMERA SOFTWARE ENGINEER

Oct. 2022 - Present

- Developed Linux kernel drivers for **Snapdragon** chipsets in premium **Android** phones, optimized the **system cache**, and enhanced the code-base based on Klockwork feedback. Worked on scalable architecture for camera hardware management and improved **image post-processing**.
- Focused on **clock voting** for chipset operations, streamlined **I2C** communications within the Linux kernel for camera components, and worked with **HLOS** layers to bolster camera functionalities in multimedia frameworks.
- Demonstrated a consistent ability to **communicate and collaborate within dynamic teams**, driving improvements in camera software performance.

**Relevant Skills:** (Proficient): Java, **C/C++**, Python, **Git** (Familiar): PyTorch, TensorFlow, Keras, SQL, Javascript, HTML, CSS, Ruby, C#

**Soft Skills:** Bilingual Communicator (English, Arabic) • Leader • Motivator

## Projects

Please visit my **Website** and GitHub **@akailany** as it contains over 20 projects, giving a detailed idea of how broad and inclusive my skillset is.

### Realistic Drone Simulation Software

Academic Project

- An **Android** based search and rescue drone simulation application, developed in **Android Studio**.
- **Publish-subscribe** model is used to communicate with a server over **ROSbridge** to obtain info such as coordinates, battery life and objectives.
- Using **Google maps API**, info is displayed on an **XML-based UI** that enables users to control the drones in a **realistic** simulation.
- To allow for simultaneity, **parallel programming** was used to control and display drones using **multi-threading**.

### Agriculture Vision Application

Academic Project

- An **Android** app that supports agricultural computer vision on the **PyTorch Mobile** framework, this app is intended to work on UAV imagery on-board a drone, but an Android app was used due to lack of resource.
- The ML model is a **PyTorch** implementation of a complex Self-Constructing graph with a Convolutional Neural Network (**CNN**) and an adaptive class weighting loss. The model architecture is an extension of a research paper obtained at this Link.
- Different **Python** libraries were used in the creation of this model, some of which are **NumPy**, **SciKit-Learn** and **OpenCV**.

### Facebook Image Analyzer Using Google Vision

Academic Project

- **Web-based app** which uses **Servlets (JSF framework)** to **authenticate** users then retrieve their Facebook images using **Facebook's API**
- These images are then analyzed using **Google's Cloud Vision API** and the returned data is stored in a database.
- Data feedback from Google cloud vision is stored onto **Firestore's database** to **optimize** API running times.
- **TinEye API (free version of Pinterest)** **queries relevant** postings to the user's Facebook image based on Google visions AI analysis.
- The web app is developed and hosted using **Google App Engine**, however, I also have another version hosted using **Firebase**.

### Celebrity Deathmatch

Personal Project

- For this game the **Unity game engine** was used to develop a **2D** fighter game.
- The game features two characters, Hillary and Trump, the **skeletons**, hit-boxes and **AI** of the characters was coded from scratch.
- The **C# language** was used for almost all scripting, including various combat **movements** as well as **sound** feedback and winner celebrations.

### Exploring and Measuring UNIX-Based File Systems

Personal Project

- Exploring the inner-workings of a Unix-based file system by writing **C** programs that exercise the file system in question in different ways.
- These programs can use **system calls**, such as read, fsync, write, open, and close, to determine how long file system operations might take.
- Different discoveries regarding the system architecture were made, such as **block size** and extent based **memory allocation** method.