Atiya **Kailany**

Software Engineer

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Education

California State University, East Bay
San Francisco Bay Area

M.S. in Computer Science — *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 — *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 Innovation Center, Inc.
San Diego, CA

Camera Software Engineer — *Oct. 2022 - Present*

- Developed Linux kernel drivers for **Snapdragon** chipsets in premium **Android** phones, optimizing **system cache**, image post-processing, and refining architecture for camera hardware management, including integration with **ISP** for enhanced image quality.
- Led device driver development and debugging across large codebases in **C/C++**, ensuring compatibility with **Android OS** and improving multimedia frameworks. Integrated feedback from tools like Klocwork to enhance code quality and stability.
- Specialized in **BSP** (Board Support Package) and **operating system** integration for efficient clock voting, GPIO, and **I2C** communication management within the Linux kernel.
- Experienced in hardware **bring-up** and cross-functional collaboration, consistently driving performance improvements and coordinating with **HLOS** layers to enhance camera functionalities.

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.