**Allen Peng Lu**

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Skilled in the deployment and maintenance of elegant Android Studio mobile applications. Experienced in developing operating system components such as Linux Shells and Simulated File Systems. Well-versed in various algorithm design paradigms using discrete mathematics. Experienced in Object Oriented design, analysis, and implementation in teams of 2-6 developers.

**Areas of Expertise**

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| --- | --- | --- |
| * Python | * Java | * Android Studio |
| * Python SQLite3 | * C/C++ | * Mips Assembly |
| * Excel Forecasting Simulations |  |  |

**Education**

* Computing Science, 3rd Year, University of Alberta (Sept 2016 – Scheduled for April 2021)

**Personal Projects**

**Git handle: ApluUalberta**

**Mood-Tracker Android Studio Project (September 2019 – December 2019)**

Glo – Android Mobile App

Github Link: <https://github.com/CMPUT301F19T03/GroupProject1>

* Android Mobile Phone Application to track a user’s moods
* Utilizes Google Firestore API to keep track of User Data, progress, and achievements
* Uses Google Maps API to allow users to specify the locations of given moods
* Allows users to request and follow other users and view their most recent moods on a map
* Programmed in Java

**File-System (November 2019 – December 2019)**

File System – C++ File system implementation

Github Link: <https://github.com/ApluUalberta/CMPUT379-Assignment-3/tree/master/a3-starter-code>

* C++ program that supports manipulating, and mounting a simulated disk
* Uses superblock inodes to track, create, delete, edit, and read files.
* Supports consistency checks to see if a disk is good to mount
* Allows user to create, delete, write, and edit File directories
* Allows user to use the ls command to display the current files and folders in the current simulated directory
* Allows the user to change the current working directory in the mounted file system.

**Linux Shell in C++ (September 2019 – October 2019)**

Dragonshell – Linux Shell

Github Link: <https://github.com/ApluUalberta/Dragonshell>

* C++ program that uses System calls to create a Linux terminal shell when run
* Supports CD, PWD, A2PATH, object file execution, file output redirect, background process execution, and signal interrupts

**Cube-Statistics Recursion in Mips Assembly (February 2019 – March 2019)**

N-Dimensional Statistics – Mips Assembly

* Reads a k-dimensional array from a file, places values of elements of the array in memory following the row-major layout, and Reads descriptions of cubes that appear in the file immediately after the array
* Calls a recursive cube statistic functions that calculates the total negative integers, positive integers, number of positives, and number of negatives of the N-dimensional Array and prints the output.

**Bike ride Tracking Android Studio Project (September 2019 – October 2019)**

RideBook – Android Mobile App

Github Link: <https://github.com/ApluUalberta/RideBook>

* Android Mobile Phone Application to track the bike rides of a given user
* Allows user to record a Ride’s date, time, distance ridden, speed, cadence, and notes.
* Enforces proper time and date format
* Displays in a listview like a phone contacts application
* Programmed in Java

**Weightlifting Android Studio Project (April 2019 – Present)**

Gravity – Android Mobile App

Github Link: <https://github.com/ApluUalberta/Gravity>

* Android Mobile Phone Application suited for Powerlifting-specific weightlifting
* Utilizes Google Firestore API to keep track of User Data, progress, and achievements
* Creates a game-like achievement system that compares User’s progress to real Powerlifting Federations
* Plots user work-out numbers on a line graph that can be found under the user’s profile
* Integrated 1-rep-max calculator that auto-updates the user’s achievements and progress
* Programmed in Java

**Crime Statistics Database Program (March 2019 – April 2019)**

Crime Statistics UI - Edmonton Open Data Initiative

Github Link: <https://github.com/ApluUalberta/Crime-Statistics-Database-Program>

* Simple Command Line Interface that allows for 4 complex database queries on a given Database
* Embedded SQLITE3 Queries in Python to create a simple UI
* Imported Pandas and Folium Libraries to plot queried data onto graphs
* Menu Entry runs 1 of 4 Queries depending on user input
  + Each Require Additional input, such as year

**LPT-Johnson Scheduling Program (September 2019 – December 2019)**

File Instance Generator and Average Plotter

Github Link: <https://github.com/ApluUalberta/LPT-Johnson-Scheduler>

* Takes in files (-i argument) or generates 400,000 Random File instances (-r argument) with Specific format
* Schedules specified number of Jobs with a specified size and number of machines using LPT and Johnson Algorithms to read the instance files
* Takes the Average Ratios of Processing Time of specified file groups for the given algorithms and Plots them on 2d, and 3d graphs using GNU Plot

**Hobbies**

* Powerlifting, Drone Photography, RC Vehicle Modification, E-Commerce Entrepreneurship