Kaung Zaw Hein (Alex Hein)

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I. Education

- <u>University College London (September 2019-present)</u>
 - MEng Computer Science:
 - Modules:
 - Design and Professional Skills: Gained experience in the tedious process of debugging large projects of code.
 - Principles of Programming: Learnt core concepts and approaches to solving problems in C and Haskell
 - Object Oriented Programming: Used Java to work on implementing a hospital-patient data UI
 - Algorithms and Data Structures: Learnt concepts about complexity and efficient programming
 - Compilers: Learnt theories behind industrial strength compilers to write new languages
- International School Yangon (August 2017-May 2019)
 - International Baccalaureate, 40/45

II. Experiences

- <u>Self-taught A Level</u>
 - \circ Further Mathematics (A)
 - Basic Software Engineering Certificate of Competence (May 28th 2019 July 8th 2019) KMD Computer Training Centre)
 - $\circ~$ Minimum of 50 hours hands-on experience
 - Introduction to Software Engineering through Java and C#
 - <u>Technology Intern (June 30th 2020 July 2nd 2020) at Bright Network</u>
 - Participated in the 3-day (June 30th to July 2nd) Internship Experience UK Technology program
 - Gained knowledge and understanding on Communications in Tech-concentrated firms, complexities of systematic testing (Unit Testing, Integration Testing, Functional Testing, Performance Testing, Stress Testing) and Agile Software Development
 - Create a plan for the build, testing and release, using two teams on facial recognition based on a specific scenario of a product manager. Reviewed and collaborated with other individuals on the programme.
 - Applied the concepts of systematic testing and Agile Software Development (such as sprints, user stories, the Software Development Cycle)

III. Projects

Built a computer

- Creating a microprocessor through the Quartus Prime application along with an FPGA board.
- Gained the understanding of the internal systems of a microprocessor including the uses of logic gates, instruction memories, register files and data memories
- Learnt to debug complex systems efficiently

Tetris Auto-Player

- Wrote a small AI programme that plays Tetris in Python
- Designed an optimal algorithm to solve the game, which evaluates the position of incoming blocks depending on the aggregate height, number of gaps, number of complete lines and surface.

<u>University Login Programme</u>

- Written a programme in Java to implement GUI, and gained better understandings of fundamental OOP concepts
- Used MySQL database to enable university staff to enter their details (according to department, ID number, etc.)

• <u>Disparity map algorithm</u>

- \circ Executed a forward pass on a pair of grayscale images, that has undergone horizontal pixel shifts,
- Learnt to interpret grayscale images to 2D Arrays using the OpenCV library in order to build a cost matrix, which was later computed through a backward pass to infer depth of the image.
- Gained experience in object oriented programming methods in Python

<u>"DELESSCO" COVID-19 Delivery App</u>

- Built an app with AndroidStudio with a team during a Hackathon that enables individuals more vulnerable to the outbreak to order delivery on essential items such as food and medicine.
- Gained experience in front-end development by using Flutter and Dart to create UI features for the user profile of volunteers willing to do the delivery

<u>COVID-19 Delivery Algorithm</u>

- Designed an online software system for the efficient delivery of essential supplies from shops by volunteers to vulnerable people using Python
- Learnt databases more in depth by creating a system that imitates its functionalities using basic data structures such as HashMaps, Arrays, etc. and loading them to a .pickle file.
- Devised a matching algorithm that can find volunteers available on a given day, within a certain travel distance of the vulnerable, and within a certain travel distance of a shop that has items in stock as well as selecting the minimal number of shops for optimising travel time based on only the items requested by the vulnerable user by utilising a variety of data structures.

IV. Skills

- Programming Languages: Python, Java, C, Haskell, Flutter & Dart
- IDEs: PyCharm, Intellij, Visual Studio Code & Android Studio
- Languages: English (native proficiency), Burmese (native proficiency) and Mandarin (intermediate working proficiency)