Aseem Apastamb
Software Engineer

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Skills:
- **Languages:** C++, C#, Lua, C, Java, Python
- **Other Software:** Unity, Unreal

Projects:
Academic

SIK Engine   **Aug '22 – Dec '22**
- A 3D game engine built using C++ and OpenGL.
- Worked on resource loading and a reflection system for serialization.
- Integrated a scripting system for various gameplay systems and behaviours.
- Team-based project developed using an agile model.

Lights Out   **Jan '22 – Apr '22**
- A 2D puzzle platformer game developed in C++, using an ECS based game engine.
- Contributed to the physics engine, gameplay systems, and level design.
- Learnt the basics of an Entity-Component-System architecture pattern.
- Experienced team-based project development, including practices like source control.

3D Animation Framework   **Aug '22 – Dec '22**
- A C++ framework to load complex 3D models and animations.
- Supports multiple model formats e.g., Collada, and multiple animations.
- Built a quaternion library for use in bone transformations.

2D Game Engine   **Aug '21 – Dec '21**
- A 2D game engine developed in C++, and a top-down shooter game built in this engine.
- Helped understand how game engines are structured, including the game loop, physics, event handling, rendering, etc.
- Building a simple game helped in learning gameplay programming, level design, etc.

Facial Expression Recognition   **2020**
- Architected various deep learning models using convolutional neural networks to classify 7 different expressions on human faces and incorporated multiple public datasets to train models.
- Enhanced the project to work on static images and live video, with the results overlayed around subject's face to display the emotion.
- Used OpenCV to perform pre-processing on the data, CNNs for feature extraction using Python libraries like Pandas and Tensorflow and used Flask to deploy a web page for usability.

Binary Classification   **2020**
- Assessed various machine learning models that perform classification on a binary dataset.
- Performed comparison on different types of classifiers and measured the efficiency and accuracy of all models.
- Used Python and it's libraries like Pandas and scikit-learn to run the models to calculate the results.

Personal

Box Shooter   **Jan '21**
- A 3D first-person shooter built in Unity, where the player gains points by shooting objects in the environment.
- Demonstrated player input, interactive UI, some basic scripting, and 2 different levels.

Roller Madness   **Dec '20**

- A 3D third-person game created in Unity, where the player controls a ball, collects coins, and avoids enemies.
- Showcased user input, basic physics-based movement, and enemy behaviour.

Publications and Training:

Publication   **Jun '21**

A research paper on data analysis and machine learning called *Investigating the Impact of Data Analysis and Classification on Parametric and Non-Parametric Machine Learning Techniques: A Proof of Concept* - published for Springer's 3rd ICCNCT 2020.

Seminar   **2019**

Delivered a 20-minute seminar on the topic of "Use of Raspberry Pi in Game Design and Development" as part of an undergraduate course.

Game Design and Development   **2019**

A 2-day Ubisoft workshop which included developing a 2.5D game with provided assets, and a level design competition.

Androledge   **2019**

A workshop which consisted of building 2 basic Android applications using Android Studio.

Education:

Master of Science in Computer Science   **Expected Graduation Apr '23**

DigiPen Institute of Technology

Bachelor of Engineering in Computer Engineering   **Graduated Nov. '20**

Maharashtra Institute of Technology, Pune (Savitribai Phule Pune University)