Aseem Apastamb

Software Engineer

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Skills:

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

Academic Projects:

Programmer

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.

Curve Drawing in Unity **Jan '22 – Mar '22**

- Designed a framework in Unity to draw various types of polynomials, Bezier curves, B-splines.
- Users can add/remove and drag the control/interpolation points to modify the curve in real time.

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.

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.

Publications and Training:

Publication **Jun '21**

'Investigating the Impact of Data Analysis and Classification on Parametric and Non-Parametric Machine Learning Techniques: A Proof of Concept' - a research paper on data analysis and machine learning 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)