Aayush Verma

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Education

- **University of Leeds**   Leeds, U.K.
  2020 – 2021, **MSc. in High Performance Graphics and Games Engineering,**
  Relevant Modules: Geometric Processing, Modelling and Rendering, Artificial Intelligence,
  Scientific Computing.

- **University of Petroleum and Energy Studies**   Dehradun, India
  2015 – 2019, **B.Tech. in Computer Science,**
  Relevant Modules: Object-Oriented Programming, Data Structures and Algorithms, Computer
  Graphics, Software Engineering and Project Management, Mathematics.

Relevant Work History

AMST-Systemtechnik GmbH.   Ranshofen, Austria
09 September 2019 – 21 February 2020, **Software Developer**
- Improved font rendering on company's proprietary software by loading meshes for different
  fonts and creating font meshes with an application made by using C++ and OpenGL.
- Designed different aircraft instruments on company's designer tool.
- Developed a graphical user interface testing application that simulated clicks with a GUI using
  Windows Presentation Foundation (WPF) and C#.
- Increased working efficiency of the department by developing a file managing tool that
  populated fields in the documentations for different products using C#.

CEBS Worldwide   Noida, India
21 May 2018 – 24 July 2018, **Intern**
- Applied regression models on client's data.
- Created an Android application that mimicked features of Quora.
- Developed the Internship Project called Speech Analysis using NLP using Google Speech-to-
  Text API.

Projects

High-Performance Volumetric Rendering *(Master's Project)*   (June 2021 – August 2021)
- Implemented a Direct Volume Renderer using two-pass raycasting with a suitable GUI using
  DearImGui.
- Studied various techniques involved in volume rendering like texture-based volume rendering
  and iso-surfaces.
- Achieved stable framerates of 90 fps for a 16 megabytes Bonsai dataset.
  Link: https://github.com/vermaayu/High-Performance-Volumetric-Rendering

Dagmar Engine *(Game Engine)*   (February 2021 – May 2021)
- In a team of 4, the objective was to create a Voxel based environment, cross-platform
  (Windows and Linux) game engine.
- Responsibilities: Coding the resource manager, scripting system, visual effects, and part of the
  GUI along with respective unit tests.

- Software Development Lifecycle: Iterative Waterfall Model.
  Link: https://dagmarengine.gitlab.io/

Space Shooter Game   (April 2020)
- A space shooter game developed using Unity engine.
- Keywords: Power-ups, varied difficulty, sprites, scenes, scripts, audio, prefabs, animation.
- Link: https://github.com/vermaayu/Unity_Space_Shooter

Product Review Analysis using Python *(B. Tech)*   (January 2019 – April 2019)
- The project is a study on dictionary-based approach and machine learning approach, using logistic regression and n-grams, for classification and analysis of a dataset on any product and representing analysed data in form of graphs and word clouds.
- Overall accuracy of the model came out to be 91% when tested over 183 reviews.
  Link: https://github.com/vermaayu/ProductReviewAnalysis

Skills

- **Programming/Scripting Languages**: C/C++, C#, Python, Lua
- **Graphic Technologies**: OpenGL
- **Tools**: Git, DearImGUI, Qt., CMake.
- **IDE**: Visual Studio, QtCreator. Command Line (Linux)
- **Game Engines**: Unity
- **Keywords**: Object Oriented Programming, Pointers, Shaders, Multi-threading, Standard Template Library.

Additional Work History

SOCH N.G.O.   Dehradun, India
August 2016 – May 2017, **Core Committee (H.R.)**
- Established relations with a school in the rural area for NGO's "Learn with Fun" initiative and taught introductory level computers and programming.
- Organised various events and volunteered for events such as "Clean On" which had a direct impact on the well-being and awareness of the town.
- Managed the Operations team.

Entrepreneurship Cell, UPES   Dehradun, India
August 2015 – May 2016, **Core Committee**
- Played a vital role in organising events such as the 'Entrepreneurial Summit - 2016' and 'Rags to Riches' and in recruiting prospect members.

Interests and Achievements

- Member of the University CompSoc society and participate in various events (Leeds).
- Volunteer work (SOCH-NGO, UPES).
- Winner of the Musical Instrument playing competition – 2016 (UPES).
- Participated in the War of Bands – 2017 (UPES).
- **Interests**: Following football, playing guitar, and running.