
LANGUAGES AND TECHNOLOGIES

- C++; C; Python; HTML/CSS; JavaScript; R; C#; SQL; OpenGL; x86-64
- Visual Studio; Jupyter Notebook; Microsoft SQL Server; Linux; MATLAB; GitHub; Unity; Figma; Photoshop

TECHNICAL EXPERIENCE

Computer Vision

Fall 2020

Computer Vision (CMPT 412), MATLAB/Python

- Implemented a digit recognition program using **convolutional neural networks** that would take either single hand-written numbers or multiple, and return their value.
- Utilized planar homographies to **augment reality** by analyzing a book cover, identifying it in space, recognising the orientation and applying some other book cover in its place.
- Learned how to conduct a **3D reconstruction** of a model using two images and sample points.

Movie Rating Predictor

Summer 2020

Computational Data Science (CMPT 353), Python

- Utilized APIs to retrieve, save, and clean movie data from OMDb, IMDb, Metascore and Rotten Tomatoes.
- Conducted **statistical tests** such as T-test, Levene test, MannWhitney U-test, to understand and identify the trends in the data.
- Created **models** to predict movie ratings based on supplied features, through **machine learning**.

C Shell

Fall 2019

Operating Systems I (CMPT 300), C

- Constructed different **schedulers** using information such as process start time, duration, or end-time to improve job performance.
- Utilized **multi-threading and pipelining** to multiplex use of the computer across several threads of execution.
- Designed a **memory manager** that has four strategies to allocate and deallocate memory using minimal space.

Ray-tracer and FruitTetris

Fall 2019

Introduction to Computer Graphics (CMPT 361), C++

- Built 2D and 3D versions of Fruit Tetris using **linear algebra and OpenGL** to better understand the application of math in games and computer graphics.
- Integrated Tetris and Falling Fruit rules into one game to improve understanding of programming game logic.
- Developed a **ray-tracer using light interaction equations** from physics and math to accurately construct static virtual environments.
- Incorporated **anti-aliasing and five-level deep reflections** to enhance the realism of the ray-tracer.

Emission Revision Web App

Summer 2019

Introduction to Software Engineering (CMPT 276), JavaScript

- Designed a web application using Ruby on Rails and JavaScript in a team of five to allow users to track their carbon emissions and footprint.
- Managed project development and team contribution through the **agile framework** of scrum.

PERSONAL PROJECTS

Full Stack Web Development

Jan 2021 - Ongoing

- Began creating websites using HTML5/CSS and JavaScript. These websites are viewable on my GitHub at github.com/AdityaRajvanshi18.
- Developed mock restaurant websites and web applications such as online libraries or Microsoft To Do clones.

Odin's Shotgun

Summer 2020

- Followed Brackey's GameJam rules to create a short game using the Unity engine and C# scripts.
- Used game timers and logic rules to create a *frenzy* mode, health regain mechanic, weapon swapping and event triggers.

NON-TECHNICAL WORK AND VOLUNTEER EXPERIENCE

- **Kitchen Porter and Barista (Summer 2018):** Learned the basics of operating a kitchen in a cafe, by observing and following instructions provided by lead chef which involved peeling vegetables, preparing sauces and meats for each dish.
- **Community Engagement(Fall 2016-2017):** Worked with SASCU (Save Street Children Uganda) to deliver food and clothes to crises cases, as well as leading fund-raising projects to assist the rehabilitation centres.

INTERESTS

- Twelve years of learning and playing tennis, as well as participating in youth tournaments.
- Passion for exploring cultures through cuisine, both by cooking and eating.
- Keen interest in constantly learning and diversifying my knowledge as well as my skillset.

EDUCATION

Burnaby, BC, Canada

Simon Fraser University

Sep 2017 – May 2021

- Bachelor of Science in Computing Science
- Undergraduate Coursework: Data Structures; Operating Systems; Databases; Algorithms; Programming Languages; Comp. Architecture; Software Development; Discrete Math; Computer Vision; Natural Language Processing.