Mehek Jethani

551-777-1960 | mehekj2020@gmail.com | https://mehekjethani.com/

Education

Brown University — Providence, RI
B.Sc. in Computer Science — *September 2020 – May 2024*
GPA: 4.0/4.0

Coursework: Computer Systems, Data Structures and Algorithms, UI/UX, Deep Learning, NLP, Computer Vision, Computer Graphics, Computational Photography, Embedded Systems, Linear Algebra, Statistical Inference

Professional Experience

Engine Engineering Intern | *C++, Visual Studio, Perforce, Jira, Confluence* — May 2023 – August 2023
Activision, Infinity Ward — *Los Angeles, CA*

- Wrote PC and console C++ code for the cross-platform Call of Duty game engine supporting a live product
- Created and shipped the new Eco Mode setting, launching CoD's Sustainability Initiative
- Developed rendering features that reduce power consumption by 50% in the multiplayer game lobbies
- Collaborated with Microsoft to profile power usage changes on XBox using PIX and implemented telemetry features to gather player device performance data

Undergraduate Teaching Assistant | *C++, OpenGL, Qt* — May 2022 – Present
Brown University — *Providence, RI*

- Designed assignment code and handouts for Brown's CSCI 1230 computer graphics course in C++ and OpenGL
- Rewrote two projects and created a new interactive assignment about coordinate spaces and transformations
- Host weekly office hours (6 hours total) to provide one-on-one conceptual and debugging help

Lead Research Assistant | *React, Typescript* — May 2021 – May 2023
Brown University — *Providence, RI*

- Led a team of 6-8 research assistants in developing Dash, a MERN stack Typescript hypermedia application
- Delegated coding tasks, supervised weekly meetings, performed user testing, handled member recruitment, and instituted code reviews to manage updates to a 100,000+ line codebase
- Implemented tools for audio/video editing, digital handwriting transcription, and document metadata interaction

Academic Projects

Geoguessr CNN | *Python, Tensorflow, Google APIs* — April 2023 - May 2023

- Compared the performance of two models built using ResNet50: one for country classification and one for latitude/longitude coordinate prediction of streetview images inspired by the game Geoguessr
- Implemented GradCAM in Tensorflow for interpreting the classifier model results
- Trained on a novel dataset of 15,000 streetview images scraped from the Google Maps API

Path Tracer | *C++, Qt, Eigen* — February 2023

- Built a physically based renderer with Monte Carlo sampling to produce images with soft shadows and caustics
- Implemented next event estimation for direct and indirect lighting, refraction with Fresnel reflection, BRDF importance sampling, and depth of field

Public Library Website Redesign | *HTML/CSS/JS, Figma, Balsamiq* — October 2022

- Assessed accessibility and usability issues of the Bergen County Cooperative Library System website
- Designed an improved version addressing identified flaws using Balsamiq wireframes and Figma prototypes
- Created a responsive version of the website using HTML/CSS/JS for mobile, tablet and desktop devices

Chess Vision | *Python, OpenCV* — May 2022

- Created a Python tool to identify and digitally display chess moves from a physical board through a live webcam
- Used traditional computer vision techniques such as Canny Edge Detection and Hough Transforms to create a socially responsible algorithm free of black box deep learning methods and external data

Technical Skills

Languages: Javascript/Typescript, Python, C/C++, HTML/CSS, Java
Frameworks/Libraries: React, Node.js, Express.js, Next.js, TailwindCSS, Tensorflow, OpenCV, OpenGL, Eigen
Tools: Unix, VS Code, Visual Studio, Qt, Git, Perforce, Jira, Confluence, GCP, Mongo, Figma, Blender