

Mehek Jethani

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

EDUCATION

Brown University

B.Sc. in Computer Science

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

Providence, RI

September 2020 – May 2024

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