Mehek Jethani

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EDUCATION

Brown University   Providence, RI
B.Sc. in Computer Science   *September 2020 – May 2024*

Coursework: Computer Systems, Data Structures and Algorithms, UI/UX, Deep Learning, Advanced Computer Graphics, Computer Vision, Discrete Math, Linear Algebra, Statistical Inference

EXPERIENCE

Engine Engineering Intern   May 2023 – August 2023
Activision, Infinity Ward   *Los Angeles, CA*
- Launched Call of Duty Modern Warfare II's Sustainability Initiative and implemented the new "Eco Mode" setting
- Developed rendering features to cut back energy consumption in the multiplayer game
- Wrote C++ code for a Triple A game engine supporting a live product with regular title updates

Undergraduate Teaching Assistant   May 2022 – Present
Brown University   *Providence, RI*
- Designed assignment code and handouts for Brown's CSCI 1230 computer graphics course in C++ and OpenGL
- Oversaw a team of TAs in completely rewriting multiple course projects and individually created a new assignment with an interactive Qt OpenGL demo to teach students about coordinate spaces and affine transformations
- Hosted two sets of weekly office hours during the semester to provide one-on-one conceptual and debugging help

Undergraduate Research Assistant   May 2021 – May 2023
Brown University   *Providence, RI*
- Led a team of research assistants in building Dash, a MERN stack Typescript browser-based hypermedia system
- Delegated coding tasks, supervised weekly meetings and codebase updates, performed user testing, managed member recruitment, and instituted a peer code review system
- Introduced features for audio/video playback and editing, digital handwritten note transcription, and a table schema interface for viewing and modifying collections of document metadata

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 based on streetview images similar to the game Geoguessr
- Implemented GradCAM in Tensorflow for interpreting the classifier model results
- Trained on a novel dataset of streetview images scraped from the Google Maps API into Google Storage Buckets

Path Tracer | *C++, Qt, Eigen*   February 2023
- Physically based renderer using Monte Carlo sampling to produce images with soft shadows and caustics
- Implemented BRDF importance sampling, refraction with Fresnel reflection, depth of field, and next event estimation for direct and indirect lighting

Public Library Website Redesign | *HTML/CSS/JS, Figma, Balsamiq*   October 2022
- Completed a design case study assessing 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 static rendition of the site using HTML/CSS/JS for mobile, tablet and desktop devices

Chess Vision | *Python, OpenCV*   May 2022
- Python app to identify and digitally display chess moves from a physical board through a live webcam feed
- Used only traditional CV techniques such as Canny Edge Detection and Hough Transforms to support a fully transparent algorithm free of black box deep learning methods and external data

TECHNICAL SKILLS

Languages: Python, Javascript/Typescript, HTML/CSS, C/C++, Java
Frameworks/Libraries: React, Node.js, Next.js, TailwindCSS, Tensorflow, OpenCV, OpenGL, Eigen
Tools: VS Code, Visual Studio, Qt, Git, Perforce, Figma, Photoshop, Illustrator, Blender, Google Cloud Platform