Helen Huang

helen-huang9.github.io | github.com/helen-huang9 | helen_huang@brown.edu | (781)-571-8068

EDUCATION

Brown University, *Sc.B in Computer Science*, 3.92/4.00 GPA — Providence, RI | **Expected Graduation May 2024**
Relevant Courses: Deep Learning, Machine Learning, Computer Vision, Advanced Computer Graphics, Computer Systems, Operating Systems, User Interface and Experience, Linear Algebra, Discrete Structures and Probability, Honors Statistical Inference

St. Mark's School 4.08/4.00 GPA — Southborough, MA | **May 2020**
Cum Laude Society, High Honors, William G. Thayer Prize

TECHNICAL SKILLS

Languages: C++, Python, Java, Swift, SQL, Javascript, HTML/CSS
Tools: PyTorch, Tensorflow, React, Maya

EXPERIENCE

Research Assistant, *Brown University Interactive 3D Vision & Learning Lab* — **June 2022 – December 2023**
- Won a summer research grant to research neural radiance fields for photorealistic novel view synthesis under Prof. Sridhar
- Tested scene data from our synthetic capture stage on various NeRF models to ensure quality of data for long scene modeling and hand-object interaction

Computer Graphics TA, *Brown University* — **June 2022 – December 2023**
- Helped write the projects and labs for Brown's Computer Graphics course during the summer
- Held weekly lab and office hours and graded student assignments during the fall

PROJECTS

Computer Graphics Projects, *Computer Graphics course* — **January 2023 – May 2023**
- Implemented a pathtracer, mesh geometry processor, physics-based simulator, and real-time renderer using C++ and OpenGL
- Rendered an underwater scene in real-time using procedurally generated terrain, L-system corals, and Bezier curve camera movements in C++
- Implemented an ink-in-water simulation to render realistic videos of ink drops diffusing in water using C++

Deep Learning Projects, *Deep Learning course* — **September 2022 - December 2022**
- Implemented a word predictor and image captioning system using LSTMs and Transformers using Python and PyTorch
- Developed a signature forgery detector with 88% accuracy using a Siamese CNN using Python and PyTorch

User Interface and Experience Projects, *User Interface course* — **September 2022 - December 2022**
- Designed and created a cooking recipe website for the video game, Breath of the Wild, using HTML/CSS and React
- Redesigned and user-tested a startup's mobile application for companies to host courses for employees using Figma

Cat Ninja iOS Game, *Personal Project* — **June 2022 - August 2022**
- Designed and developed an iOS cat ninja game in Swift using the SwiftUI and SpriteKit frameworks

Computer Systems Projects, *Computer Systems course* — **April 2021 – May 2022**
- Implemented a Venmo-like banking service in C++ where users may withdraw, deposit, and check their balance as well as pay and charge other clients. Used synchronized data structures and multithreading to ensure fast and secure transactions
- Implemented a FaceBook-like distributed system in C++ to handle server and client connections using RPCs and sharding

Computer Vision Projects, *Computer Vision course* — **April 2021 – May 2022**
- Implemented a convolutional neural network for image classification in Python using Tensorflow
- Produced a 3D voxel model of the Computer Vision professor in Python for my final project using photogrammetry techniques on self-captured images and camera poses

Recommender Program, *Software Engineering course* — **September 2021 – October 2021**
- Developed a group-recommender system in Java and SQL to match students with classmates based on skill sets and interests
- Implemented KDTrees and Bloom Filters to organize numeric and categorical data loaded from APIs and databases and to find the shortest distance between nodes

Iron Man Helmet, *Design Engineering course* — **March 2021 – April 2021**
- Led a group of 4 people to design and create a functioning voice-activated Iron Man helmet using a Raspberry Pi
- Researched, designed, and engineered the mechanism that opens and closes the mask using servos, prototyping materials like cardboard, and laser cutters

LEADERSHIP AND CLUB EXPERIENCE

Asian Student Alliance (ASA), *Head* — **St. Mark's School | September 2018 – May 2020**
- Led the 100+ student Asian affinity group in weekly meetings, school-wide events, and festivals

St. Mark's Varsity Girls Ice Hockey, *Player* — **St. Mark's School | September 2016 – May 2020**
- Won the Frey Prize for best contribution to the team for sportsmanship and teamwork