

# Helen Huang

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## EDUCATION

**Brown University**, *Sc.B in Computer Science*, 3.88/4.00 GPA

Providence, RI | **Expected Graduation May 2024**

**Relevant Courses:** Deep Learning, Computer Vision, Computer Systems, Software Engineering, Computer Graphics, Computer Animation, 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 – Present**

- 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
- Developing the software to display 54 camera streams in real-time with ~1 ms latency in Qt using Python and OpenGL

**Computer Graphics TA**, *Brown University*

**June 2022 – Present**

- Helped write the projects and labs for Brown's Computer Graphics course during the summer
- Holding weekly lab and office hours and grading student assignments during the fall

## PROJECTS

**Cat Ninja iOS Game**, *Personal Project*

**June 2022 - August 2022**

- Designed and implemented 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

**Computer Graphics Projects**, *Computer Graphics course*

**September 2021 – December 2021**

- Implemented a painting program, ray tracer, image filters, and the real-time rendering pipeline using C++ and OpenGL
- Created and rendered an underwater scene in real-time for my final project using procedurally generated terrain, L-system corals, and Bezier curve camera movements

**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

**Search Engine**, *Intro Computer Science course*

**March 2021 – March 2021**

- Designed and implemented a search engine in Scala that utilizes a PageRank and TF/IDF algorithm to process and sort >200mb of XML wikis by relevancy depending on the query entered

## 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