

John Eastman

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EDUCATION

Massachusetts Institute of Technology

Cambridge, MA

Bachelor of Science in Computer Science and Engineering, Minor in Japanese

June 2023

GPA: 4.7/5.0

- Minor in Japanese
- Notable Courses: Shape Analysis, Computational Design and Fabrication, Computer Graphics, Advances in Computer Vision, Adv. Computational Photography, Design and Analysis of Algorithms, Operating System Engineering, Computer Systems Engineering, Software Construction, Machine Learning.

EXPERIENCE

MIT Computer Science and Artificial Intelligence Laboratory

Cambridge, MA

Undergraduate Researcher - Computational Design and Fabrication Group

Feb. 2023 – May 2023

- Collaborated with a multidisciplinary team to develop a rigid body physics simulation for underwater gliders.
- Implemented differentiable hydrodynamic forces, including lift and drag, as well as changes in mass into Nvidia's differentiable simulation Python framework "Warp", utilizing CUDA acceleration.
- Optimized glider hull design using gradient descent on differentiated forces with respect to glider shape.
- Enabled glider to optimize controls for faster horizontal speed or faster vertical descent.

MIT Electrical Engineering and Computer Science Dept.

Cambridge, MA

Undergraduate Teaching Assistant

Sept. 2022 – Dec. 2022

- Served as a TA for the Advanced Undergraduate Subject: Computer Graphics (6.4400).
- Conducted weekly office hours, addressed student queries on Piazza, and provided academic support.
- Composed and graded exam questions, as well as evaluated homework assignments.

Intel Corporation

Remote

3D Acceleration Intern

May 2022 – Aug. 2022

- Developed discrete GPU driver updates to resolve bugs and enhance Direct3D performance for Windows.
- Performed in-depth GPU performance profiling and analysis utilizing advanced analysis tools.
- Engaged with modern DirectX9, DirectX11, and DirectX12 3D game titles in Windows.
- Provided technical support to developers using GPU systems for performance analysis.

MIT Mechanical Engineering Dept.

Remote

Undergraduate Researcher - Backend Server Development

June 2021 – Sept. 2021

- Collaborated with MindHandHeart to develop a website hosting therapeutic audio files for mental health support.
- Established a server backend using Python in Django, hosted by Nginx on an Ubuntu server.
- Designed a custom log-on system with user, content creator, moderator, and server administrator roles.

MIT Choi Labs

Remote

Undergraduate Researcher - Embedded Systems Designer

June 2021 – Sept. 2021

- Adapted open-source embedded mouse feeder systems for remote monitoring capabilities.
- Engineered new hardware to interface offline mouse feeder using Raspberry Pi for internet connectivity.
- Developed software for Raspberry Pi to monitor the mouse feeders and transmit data and alerts autonomously.

Andeno

Remote

Data Science Intern

June 2020 – Aug. 2020

- Developed Python command-line scripts to process raw bank statement data and perform data analysis.
- Categorized transactions into groups using Natural Language Processing techniques.
- Verified users' income, expenses, spending, and credit history and generated customer analysis and statistics.

SKILLS

Programming Languages: C/C++, Python, C#, Java, Julia, MATLAB

Frameworks: Direct3D (DirectX), OpenGL, PyTorch, UNIX, Unity, Arduino, ESP32, Nginx, Django

Proficiencies: Computer Graphics, Computer Vision, Machine Learning, Operating Systems, Embedded Systems