

Trevor Houchens

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Education

Brown University, B.Sc. in Computer Science Providence, RI
Sept. 2017 – May 2021
Courses include Computer Vision, Deep Learning, Algorithms, AI

Brown University, M.Sc. in Computer Science Providence, RI
Sept. 2021 – May 2022 GPA: 4.0
A research-oriented program where I'm focusing on visual computing

Technical Experience

Brown 3D Vision & Learning Lab, Research Asst. Providence, RI
Jan 2021 – Present

- Currently developing a high-fidelity explicit shape representation for 3D objects
- Designing algorithms to efficiently extract meshes and point clouds from our novel 3D representation
- Implemented Neural Articulated Shape Approximation in PyTorch

MBF Bioscience, Machine Learning Intern Williston, VT
May 2019 – Aug. 2020

- Used Laplacian of Gaussian detectors, custom CNNs, and Mask R-CNN to detect/label cells in cross sectional images of mouse brains
- Built visualization tools and testing programs to quantitatively and qualitatively assess our detection methods

Brown University, Teaching Assistant Providence, RI
May 2019 – Present

- Head TA of Computational Photography. Lead a staff of five and rewrote several of the course projects in Python
- TA for Intro to CS, Computer Vision, and Machine Learning. Held office hours, developed assignments, and graded projects

One Day In July LLC, Software Engineering Intern Burlington, VT
May 2018 – Oct. 2018

- Built a backtesting framework to simulate past market returns
- Used Django to construct an interactive webpage with visualizations and a control panel

Other Activities

Brown Running Club, Captain Providence, RI
May 2018 – May 2021

- Meet director for 250+ athlete track and cross country meets
- Organized an annual team trip to Acadia National Park

Projects

trevorhouchens.com/projects/

FastNeRF – A modification to the NeRF model to speed up ray sampling at inference time
Ranked 2nd in class
2020 (Final Project for 3D CV/ML)

RoadGAN – A GAN trained to output roadmaps when given a satellite image. Based on the Pix2Pix architecture.
2020 (Final Project for Remote Sensing)

SmartFAT – A fully automatic timing system for track and field races that records a video of the finish line and outputs the place and time of each athlete.
2019 (Final Project for Computer Vision)

Where2Meet – An application to let a group decide where to meet.
2019 (Final Project for Software Eng.)

Skills

Programming/Markup Languages
Python, C++, Go, Java, C, JavaScript, MATLAB, SQL, HTML, CSS

Libraries
NumPy, PyTorch, Tensorflow, Keras, OpenCV, SciPy, Matplotlib, D3, Django, Pandas

Other Interests

In my free time I enjoy endurance sports and being outdoors. See where my running, hiking, and cycling have taken me:

<http://trevorhouchens.com/outdoors/>

I also enjoy photography, especially deep sky astrophotography.