

## EXPERIENCE

### DeepScale | 2018 – Present

Deep Learning Engineer – Perception  
[deepscale.ai](https://deepscale.ai)

- Reduced FLOPs of Freespace, Lanes and Object Detection tasks by 62% using multitask learning methods in PyTorch.
  - Accuracy on all tasks maintained to within 1% IoU (segmentation) and mAP-50 (detection).
- Managed a summer intern and directed his development of an automated hyperparameter tuning framework.
- Led tooling for curation of new 60k image dataset.
- Boosted object detection by 24.8% relative mAP through improving image augmentation in MXNet.
  - Wrote explanatory blog post. Read >8.5K times and reached #7 on Hacker News. [bit.ly/dsaugblog](https://bit.ly/dsaugblog).
  - Filed provisional patent.

### Brown University Computer Science | 2016 – 2018

Undergraduate Researcher – Machine Learning

- Founded and lead Brown's first self-driving car research group. Game theory and RL for socially-strategic driving.
- Lead author: "Stackelberg Punishment and its Application to Bully-Proofing Autonomous Vehicles"
  - ICSR 2019 [arxiv.org/abs/1908.08641](https://arxiv.org/abs/1908.08641).
- Organized and built curriculum for Brown's first Deep Learning course. Now the highest-enrollment class in the CS department.

### Cooper Consulting | 2016 – 2018

Machine Learning Consultant

- Improved Rival Theory's avatar realism by developing a WaveNet-based text-to-speech system in TensorFlow.

### Convogo | 2017 – 2018

Co-Founder / CEO  
[convogo.app](https://convogo.app)

- Co-founded Convogo, an app for real-world social plans.
- Coded our iOS and Android frontends in React Native.
- Lead a team of three and grew app to >200 WAUs.

### NVIDIA | Feb 2017 – May 2017

Deep Learning Solution Architect Intern  
[nvidia.com](https://nvidia.com)

- Automated a drug discovery process for a pharmaceutical customer by implementing Deep Embedded Clustering in TensorFlow on cellular imaging data.
- Used 3D object detection networks to map real-world objects into VR. Generated synthetic training data in Unreal Engine 4 using domain randomization.

## EDUCATION

### Brown University

Sc.B. Computer Science | 2018.5  
GPA: 3.88

#### Relevant Courses

- Deep Learning (Grad-level)
- AI for Robotics (Grad-level)
- RL & Decision Making (Grad-level)
- Applied Artificial Intelligence

### Udacity

Self-Driving Car Nanodegree | 2019  
2/3 Terms Completed

## PROJECTS / HONORS

### Hack@Brown 2017 – Best UX

[bit.ly/sommeliAR](https://bit.ly/sommeliAR)

Designed the UX, narrative walk-through and music for a mixed-reality wine tasting room. We won best UX out of 120 teams.

### HackMIT 2016 – Best ML Hack

[encore.ai](https://encore.ai)

Built an LSTM in TensorFlow to generate song lyrics in any artist's writing style. We won Best Machine Learning Hack out of 156 teams.

In 2018, commissioned by NVIDIA to generate Queen-style lyrics for their NeurIPS keynote musical performance.

### Hack UMass 2015 – Finalist

[bit.ly/synthCOW](https://bit.ly/synthCOW)

Designed and coded the front-end of a digital theremin emulator in Java. We placed in the top 8 out of 42 teams.

### YHack 2014 – Finalist

[bit.ly/yhack-piik](https://bit.ly/yhack-piik)

Designed and coded the iOS app for a map-based photo sharing network in Objective C. We placed in the top 8 out of 172 teams.