

# Daniel Hunter

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## Experience

### Harvey AI

San Francisco, CA

HEAD OF AI ENGINEERING, FOUNDING RESEARCH SCIENTIST

Feb 2023 - August 2024

- Joined as the first Machine Learning hire, built out numerous from-scratch product lines, and scaled and managed the AI Engineering team, from seed stage to post Series C (\$200m+ raised)
- Developed and shipped the core Assistant AI enterprise product offering for Harvey, which is responsible for \$XXm+ ARR (patent pending).
- Scaled the AI org from zero to 10+ engineers in under a year, working with executives to set engineering culture, and scale processes.
- Developed and iterated on many internal abstractions and prototyping systems which power the day-to-day research and development of the current product lines.
- Worked closely with internal domain experts and external design partners (including onsite visits) to design and improve new product lines.

### Tesla Autopilot (Computer Vision Team)

Palo Alto, CA

MACHINE LEARNING SCIENTIST → SENIOR MACHINE LEARNING SCIENTIST

Sept 2019 - Sept 2022

- Led a four person dataset management team that handled Autolabeler operation to create datasets.
  - Designed a dataset management system for easy reproducibility and delivery of new incremental datasets.
  - Maintained the ingestion pipeline to take in customer data and run Autolabeler Neural Networks, build new targeted datasets based off customer issues, and deliver repeated wins to the in-car driving experience.
  - Wrote a particularly lightweight Autolabeling system that addressed critical in-car issues in a regulatory context.
- Trained and shipped a variety of Neural Networks for Full Self Driving. This included dataset and highloss analysis to find issues in training data, optimizing dataloading code, architecture search, tuning training regime, minimizing quantization error, designing task appropriate metrics, reducing in-car inference latency, and more. Some of the specific Neural Networks I worked on are listed below:
- Trained and shipped iterations of Emergency Vehicle Detection Neural Network (from scratch bringup)
  - Worked with data labeling team to grow the dataset in targeted directions, as well as fix specific issues in labeling ontology.
  - Extensive architecture search to profile latency performance across backbones and video modules to maximize metrics and minimize inference latency
- Trained and shipped iterations of the Driver Monitoring Neural Network
  - Increased accuracy significantly via high loss analysis, architecture search, and training regime tuning.
  - Added new Neural Network outputs to address customer issues, such as when the driver was partially out of camera view.
- Trained and shipped iterations of the Camera Occlusion Neural Network (patent pending, from scratch bringup)
  - Added new Neural Network outputs to address customer issues, such as specific cases of difficult to detect tire spray occluding the leading vehicle.
- Trained and shipped iterations of the Pedestrian Semantic Classification Neural Network (from scratch bringup)
  - Increased accuracy via high loss analysis and extensive architecture and training regime tuning.
- Wrote an architecture visualization graph tracer to represent the Neural Network visually along with per-layer latency, which is used across the Vision team to optimize inference latency.

### DeepScale (acquired by Tesla)

Mountain View, CA

ENGINEER IN DEEP LEARNING RESEARCH

June 2018 - Sept 2019

- Wrote the internal repository for PyTorch training used for deep learning experiments.
  - Designed a generic training loop to work with arbitrary dataloaders, architectures, and metrics.
- Used PyTorch to achieve 77% class IOU on Cityscapes dataset using a DeepLabV3+ style net.
- Owned freespace and lane semantic segmentation Neural Networks
  - Wrote annotation guide for both tasks, and QA'ed annotated data from Samasource.
  - Redesigned the previously mentioned Cityscapes model to use 1/100th - 1/200th of the FLOPS.
  - These two networks (along with an object detector) were displayed at CES 2019 as a flagship demo.

## Education

### University of California, Santa Cruz

Graduated June 2018 (Honors)

B.S. ROBOTIC ENGINEERING

- Spring 2018 (Senior Project): Led a five person team to develop an autonomous robot capable of navigating an indoor floor plan with dynamic obstacle avoidance using ROS. Received Deans' Award.