

Joseph Zhong

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Education and Teaching

University of Washington | Computer Science, combined Bachelor's/Master's Degree Aug. 2015–Jun. 2020

- Graduate Courses: Machine Learning, Deep Learning, GPU Programming, Natural Language Processing
- Undergraduate Courses: Machine Learning, Artificial Intelligence, Robotics, Algorithms
- Online Courses: Stanford NLP with Deep Learning (CS224n), Stanford CNNs for Visual Recognition (CS231n)
- Computer Vision Research Reading Group with Professor Ali Farhadi: github.com/joseph-zhong/Papers

Artificial Intelligence (CSE473) | Teaching Assistant Aug. 2017–Jan. 2018

- Assisted with course-planning and developed exam questions and held weekly office hours
 - Instructors: Professor Dieter Fox (Autumn 2017) and Professor Luke Zettlemoyer (Spring 2018)
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Research and Work Experience

Xevo Inc. (acquired Surround.IO) | Deep Learning Research Intern Seattle, WA | Jan. 2017–Present

Jan. 2018–Present

- Ensembling multiple real-time neural network architectures to detect distracted-driving habits
 - Correlated depth estimation, semantic segmentation, 3D face reconstruction and eye-gaze estimation
- Ported several pre-trained weight models from Theano and PyTorch to Tensorflow
- Experimented with 3D convolutions for estimating driver eye-gaze across time-correlated video input

Jan. 2017–18

- Studied embedding methods for adapting face verification methods to cluster drivers by vehicle telemetry
- Architected pipeline to analyze neural network output: object detection, 3D face alignment and recognition
 - Experimented with single-shot and two-stage methods trading off speed and accuracy: SSD vs R-CNN

UW Reality Lab/GRAIL | Research Assistant Seattle, WA | Aug. 2017–Present

- Mapping raw speech-audio input to face landmarks with recurrent neural networks
- Developing automated pipeline to synthesize monologue video from speech-audio input from YouTube videos
- First undergraduate funded by the UW Reality Lab: realitylab.uw.edu/2018rpc.html
- Advised by Professor Ira Kemelmacher-Schlizerman

Surround.IO | Machine Learning Research Intern Seattle, WA | Jun. 2016–Dec. 2016

- Studied classical object detection methods for automatically tagging and querying video frames
 - Built an automated object-detection training pipeline with automatic labeled-data generation using OpenCV
- Presented to investors a “distracted driver” detector developed in one week
- Xevo Inc. acquired Surround.IO in Dec. 2016 during my part-time winter internship

StudentRND | CodeDay Regional Manager Minneapolis, MN | Aug. 2014–Oct. 2016

- Organized hackathon for low-income/underrepresented middle and high school students: codeday.org
 - Drove 5x growth over two years and 40% female participation, also founded local MSP hackathon: hacktheheat.net
 - Partnered with local non-profits and coordinated guest tech talks (GirlsInTech, GirlsWhoCode)
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Projects and Accolades

Visual Speech Recognition | *Automated Video Captioning with deep learning* Seattle, WA | Oct.–Dec. 2018

- Built an automated lip-reading system for video captioning with only video-frames as input

Convolutional Neural Networks from scratch | *CSE599: Graduate Deep Learning* Seattle, WA | Oct. 2018

- Implemented a working convolutional neural network from scratch in C in two days

Stanford TreeHacks | *Political News Spectrum Classifier* Stanford, CA | Feb. 2017

- Chrome extension that suggests articles of complementary perspective upon hovering a biased news article

UW DubHacks '16 | *Qualtrics Best Hack Award* Seattle, WA | Oct. 2016

- Real-time “confused student” detector in 24 hours by extracting facial sentiments via IBM Watson

UW DubHacks '15 | *4th Place Finalist* Seattle, WA | Oct. 2015

- Bike retrofit to remotely mine Bitcoin via calorie burn rate and biking RPM (Arduino, Android, MSFT Band)

UW DubHacks '14 | *2nd Place Finalist and Best Microsoft Hack* Seattle, WA | Oct. 2014

- Android and Windows Phone app that detours commuters out of traffic via voice