

Joseph Zhong

☎ (425) 628-7248 | ✉ josephz@cs.washington.edu | 📷 joseph-zhong | 🌐 josephzho.ng

Research and Work Experience

- Facebook** (*Facebook Reality Labs*) | Research Engineer New York, NY | Aug. 2019-Present
- Developing cloud infrastructure and Jupyter-based tools for scientific experimentation
- CTRL-labs** (*acquired by Facebook*) | Deep Learning Research Engineer New York, NY | Apr. 2019-Aug. 2019
- Developed machine learning pipelines and Kubernetes cloud infrastructure
 - Developed an ETL system improving data-loading efficiency and model training speeds by 5-10x
 - Facebook acquired CTRL-labs in late 2019 after conversion to full-time after my summer internship
- Xevo Inc.** (*acquired by Lear*) | Deep Learning Research Intern Seattle, WA | Jan. 2017-Apr. 2019
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
 - Converted 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
 - Traded off speed and accuracy between single-shot/two-stage detection methods
- Surround.IO** (*acquired by Xevo Inc.*) | Machine Learning Research Intern Seattle, WA | Jun. 2016-Dec. 2016
- 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
- UW Reality Lab** | Research Assistant Seattle, WA | Aug. 2017-Apr. 2019
- 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 ever funded by the UW Reality Lab: <https://realitylab.uw.edu/>
 - Advised by Professor Ira Kemelmacher-Schlizerman
- 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-profit chapters and coordinated guest tech talks (GirlsInTech, GirlsWhoCode)
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Education and Teaching

- University of Washington** | Computer Science Aug. 2015-Apr. 2019
- 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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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