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Education

Georgia Institute of Technology • M.S. Computer Science Summer 2019
Machine Learning & Robotics specialization **Research:** 2D/3D understanding, Adversarial Deep Learning, Autonomy
Advanced Computer Vision Graphical Models Optimal Control & Reinforcement Learning Robotics: Planning Comp. Photography Blockchain & Crypto

University of Southern California • B.S. Computer Science and Business Administration August 2017
Computer Systems & Security specialization **Dean's Lists,** School of Engineering & School of Business

Work

Lyft Level 5 • Autonomous Vehicles Fall 2018
Research Engineer Intern, Perception Palo Alto, CA
> Led end-to-end 3D object detection from scratch, deep learning on LiDAR point clouds, KITTI BEV/3D projection utilities & paper discussions
> Researched calibration, 3D proposals, voxel encoding, upsampling to extend real-time TensorFlow w/ custom C++ ops trained on cloud

Spotify • Network Security Summer 2018
Data Science Intern New York, NY
> Fraud detection with account takeover risk score via unsupervised ML and statistical models on machine-generated access logs
> Preemptive IDS OKR with novel feature encoding, k-means & anomaly detection in sklearn. validated high precision with F_1-score

Tencent YouTu Lab • Computer Vision Winter 2017
Research Intern, Deep Learning Shenzhen
> Evaluated RCNN, FPN, one-stage object detectors with custom loss layer & hyperparameter tuning for speed/accuracy tradeoffs
> Finetuned SSD in Caffe with CUDA backprop. Trained using adaptive learning rate to catalyze convergence on PASCAL VOC data

Apple • macOS Performance Summer 2016
Software Engineering Intern Cupertino, CA
> Designed time-sort inverted index to backtrack bottleneck processes in selected interval from verbose, context-switch trace logs
> Investigated XNU's concurrent I/O, coalesced timer interrupt and thread pooling scheduler to extend OSX kernel with patch script

Research

Papers • "AdVis: Visualizing and Attributing ML Attacks to Adversarial Examples in Real-time", Lin et al. 2018.
• "Detecting Graphical Regions of Interest with Gaussian Process Bayesian Optimization", Lin et al. 2018.

Publications • [1] Cabrera et al. "Interactive Classification for Deep Learning Interpretation", arXiv. Demo, CVPR 2018.
Open source • Tensorflow.js: explore real-time Adversarial Attacks with FGSM – featured by N.Thorat @Google AI
MOOCs • Deeplearning.ai (Coursera) · Stanford CS231n · Data Mining (UIUC) · AI for Robotics (Udacity) · MIT Self-Driving Cars

Academia

Georgia Tech • Graduate Researcher • Machine Learning & Perception Lab Spring 2019, 2018
> S'19: RGB-D understanding with geometric features for 3D deformable RoI+CNN object detection of synthetic rendered scenes
> S'18: real-time inpainting + hotswap image classification webapp to visualize CNN sensitivity maps at Polo Club of Data Science

NASA Jet Propulsion Laboratory • Capstone Lead • Virtual Reality Prototyping Network Spring 2017
> Architected modular I/O to explore IMU, EMG, IR input devices for synchronized, cross-platform remote collaboration in UnityVR

USC Viterbi • Teaching Assistant • CSCI-201 Software Engineering in Java Fall 2016
> Led weekly labs, grading, office hours for intermediate CS course on GUI, multi-threaded, TCP/IP socket & parallel programming

Competitions & Social Good

Stanford TreeHacks (x2) • Best Awareness, Facebook's Choice, Amazon Best Voice UX Palo Alto, Feb 2019, 2017
> 1) Gamify opinion debates with Tinder-like ARKit discovery & anon. incentives 2) Meal-logging dashboard with Arduino bottle + Alexa

Facebook Hackathon Global Finals • 3rd Place Menlo Park, November 2017
> VR training scenes with Speech-to-Text input for implicit-tagged workplace bias-buster and sentiment analysis with LSTM

UMichigan MHacks • Best overall Microsoft Hack Ann Arbor, September 2015
> Navigating visual-impairment: HAAR classifiers on Kinect RGB-D to recognize objects with Myo-calibrated haptic feedback

Leadership

Fellowships • Kleiner Perkins Engineering Fellow, UPenn PennApps Fellow Spring 2018, Summer 2017
Invited Talks • Autonomy: Perception and Obstacle Detection at Stanford IEEE x Lyft Level5 Fall 2018
News coverage • "GT Presents 13 Papers at Premier Computer Vision Conference CVPR" – Georgia Tech News, 06/2018
• "Bias-busting Tech from USC team wins 3rd prize at Facebook Global Hackathon" – USC News, 01/2018

Skills • C/C++, Python, JavaScript, Java, TensorFlow, PyTorch, OpenCV, sklearn, React, Django, MATLAB, Unity, ObjC, Android