

# Kurtis Evan David

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## EDUCATION

### UT AUSTIN

#### MS IN COMPUTER SCIENCE

Thesis Advisor: Dr. Qiang Liu

August 2020 | Austin, TX

GPA: 3.83

### UT AUSTIN

#### BS IN COMPUTER SCIENCE

#### BS IN MATHEMATICS

May 2019 | Austin, TX

GPA: 3.92

## COURSEWORK

### GRADUATE

Combinatorics and Graph Theory

Convex Optimization

Deep Learning Seminar

Deep Probabilistic Modeling

Fair/Transparent Machine Learning

Natural Language Processing

Physical Simulation

Programming Languages

### UNDERGRADUATE

Algorithms and Complexity

Artificial Intelligence

Competitive Programming

Computer Graphics

Computer Vision

Data Mining

Machine Learning

Mathematical Modeling

Mathematical Statistics

Neural Networks

Numerical Methods

Software Engineering

## SKILLS

### PROGRAMMING

Python • C++ • C • SQL

Matlab • Java • JavaScript

R • Pine Script

### FRAMEWORKS

PyTorch • Caffe2 • TensorFlow

OpenGL • OpenCV

## EXPERIENCE

### HRL LABORATORIES | AI RESEARCH INTERN

July 2020 - October 2020 | Malibu, CA

- Focused on adversarial attacks on convolutional neural networks
- Investigated novel defenses through pruning and Fourier analysis to target robust/nonrobust features

### INSTAGRAM | SOFTWARE ENGINEERING INTERN

May 2019 - August 2019 | San Francisco, CA

- Developed new Stories ranking models, balancing Direct and Stories metrics
- Implemented neural network pruning and tested the *Lottery Ticket Hypothesis* on production ranking models

### FACEBOOK, INC. | SOFTWARE ENGINEERING INTERN

May 2018 - Aug 2018 | Menlo Park, CA

- Developed new features for feed ads ranking model through big data pipelines
- Implemented new pooling layers in their neural network architectures using Caffe2

## RESEARCH

### UT STATISTICAL LEARNING AND AI | RESEARCH ASSISTANT

March 2019 - August 2020 | Austin, TX

- Supervised by **Prof. Qiang Liu** and **Dr. Ruth Fong**, with a focus on interpretability and fairness of neural networks. Master's Thesis: *Debiasing Convolutional Neural Networks via Meta Orthogonalization*.
- Developed and implemented explainable neural architectures, saliency map conditioning, interpretability method analysis, monotonic neural networks.

### SELECTED COURSE PROJECTS

Links Provided

- Realistic Image Perturbation Distributions for Model Agnostic Anchors
- Bidirectional Decoding Schemes in Seq2Seq Learning for Machine Translation
- Kawaii Motion Capture to 3D Skeleton Animation

## PUBLICATIONS

- [1] **Kurtis Evan David**, R. Fong, and Q. Liu. Debiasing convolutional neural networks via meta orthogonalization. In *NeuRIPS Workshop on Algorithmic Fairness through the Lens of Causality and Interpretability*, 2020.
- [2] **Kurtis Evan David**, H. Keane, and J. M. Noh. Ganchors: Realistic image perturbation distributions for anchors using generative models (**arXiv Preprint**), 2019.

## SERVICE

Spring 2020 Graduate TA for Data Science Laboratory

Fall 2019 Graduate TA for Data Science Principles

Spring 2019 Undergraduate TA for Data Science Principles

Spring 2018 Undergraduate TA for Computer Organization and Architecture