

# Kurtis Evan David

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## Education

- 2015-2020 **University of Texas at Austin,**  
*Computer Science, Master of Science and Bachelor of Science.*  
Thesis *Debiasing Convolutional Neural Networks via Meta Orthogonalization*  
Advisors Qiang Liu, Ruth C. Fong
- 2015-2019 **University of Texas at Austin,**  
*Mathematics, Bachelor of Science.*  
Focus on Mathematical Sciences.

## Experience

- July 2023 - **Research Engineer, GOOGLE DEEPMIND.**  
Present
  - Applied Multimodal Large Language Models.
- Dec 2021 - **Senior Research Scientist, Technical Lead, PROTOPIA AI.**  
June 2023
  - Leading research and development of secure inference and training of deep learning models.
  - Applying core tech to customer use cases in facial recognition, large language models, and tabular data.
  - Formulating novel methods in stochastic representation learning.
  - Architecting training infrastructure for internal experimentation.
- Nov 2020 - **Software Engineer, Machine Learning, META AI APPLIED RESEARCH.**  
Dec 2021 Responsible AI: Fairness & Inclusion
  - Developed core functionality of Fairness measurement tools, including statistical computation and scalability
  - Conducted applied research by developing necessary infrastructure and novel evaluation metrics
  - Prototyped privacy-first measurements, enabling large scale fairness measurements of ML models with respect to protected attributes. Read more here:  
*How Meta is working to assess fairness in relation to race in the U.S. across its products and systems*
- July 2020 - **AI Research Intern, HRL LABORATORIES.**  
Oct 2020
  - Focused on understanding adversarial attacks on convolutional neural networks
  - Investigated novel defenses through pruning and Fourier analysis to target robust/nonrobust features.
  - Submitted patent for edge-device adversarial detection
- May 2019 - **Software Engineering Intern, INSTAGRAM.**  
Aug 2019 Instagram Sharing ML
  - Developed new Stories ranking models, balancing Direct and Stories metrics
  - Implemented neural network pruning and tested the *Lottery Ticket Hypothesis* on production ranking models

## Research

- Nov 2021 **How Meta is working to assess fairness in relation to race in the U.S. across its products and systems,**  
Meta, Responsible AI et al.,  
*Whitepaper.*
- Nov 2020 **Debiasing Convolutional Neural Networks via Meta Orthogonalization,**  
**Kurtis Evan David,** Qiang Liu, Ruth C. Fong,  
*NeuRIPS, 2020 Workshop on Algorithmic Fairness through the Lens of Causality and Interpretability.*
- June 2019 **GANchors: Realistic Image Perturbations for Anchors Using Generative Models,**  
**Kurtis Evan David,** Harrison Keane, Jun Min Noh,  
*arXiv preprint.*

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## Teaching

- Spring 2020 **EE460J Data Science Laboratory**, *Graduate Teaching Assistant*.  
Fall 2019 **EE461P Data Science Principles**, *Graduate Teaching Assistant*.  
Spring 2019 **EE461P Data Science Principles**, *Undergraduate Teaching Assistant*.  
Spring 2018 **CS429H Computer Organization and Architecture**, *Undergraduate Teaching Assistant*.  
Spring 2017 **Computational Intelligence in Design**, *Undergraduate Teaching Assistant*.

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## Awards

- 2017-2019 **Unrestricted Endowed Presidential Scholarship**, *UT Austin*.  
Nominated by the Mathematics Department for academic excellence.
- Fall 2016 **TAMUHack Quantlab Financial Prize**, *Texas A&M*.  
Created a Chrome extension dubbed SubSearcher that allows users to search through video audio.
- Fall 2015 **Albert A. Bennett Calculus Exam 2nd Place**, *UT Austin*.  
Open ended calculus exam consisting of 5 challenges. Graded by correctness and proof quality.
- 2015-2019 **Houston Area Rodeo Scholarship**, *UT Austin*.  
2015 **Valedictorian**, *Klein Oak High School*.

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## References

### **Qiang Liu,**

*Assistant Professor,*  
Computer Science, UT Austin,  
lqiang@cs.utexas.edu.

### **Sujay Sanghavi,**

*Associate Professor,*  
Electrical and Computer Engineering, UT Austin,  
sanghavi@mail.utexas.edu.

### **Jonathan Tannen,**

*Research Engineering Manager,*  
Meta AI Applied Research,  
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### **Ruth C. Fong,**

*Teaching Faculty Member,*  
Computer Science, Princeton University,  
ruthfong@cs.princeton.edu.

### **Hadi Esmaeilzadeh,**

*CTO, Protopia AI*  
*Associate Professor, UC San Diego,*  
Computer Science and Engineering,  
hadi@eng.ucsd.edu.

### **Michael A. Warren,**

*Senior Research Staff Scientist,*  
HRL Laboratories,  
maw@mawarren.net.