# Jiahui (Karen) Chen

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https://jiahuikchen.github.io

## Education

**UNIVERSITY OF TEXAS AT AUSTIN**
**Ph.D. Electrical and Computer Engineering** 2023 to Present
**Advisor:** Dr. Amy Zhang
**Research Areas:** multimodal generative models, unified text-image generation, diffusion models, text-to-image model evaluation

**UNIVERSITY OF UTAH**
**B.S. Computer Science, Minors in Math and Cognitive Science** 2016 to 2020
Graduated Cum Laude, Recipient of the President's Scholarship, Regents' Scholarship

## Research & Professional Experience

**VISITING RESEARCHER – META AI Research (FAIR)** May – Dec 2025
Post-trained multimodal models to enable unified image generation and text reasoning within a single inference call, allowing the model to seamlessly transition between modalities during generation.
Designed a weakness-targeted dataset and performed reward function analysis, leading to significant text-to-image performance improvements over the base model.

**RESEARCH SCIENTIST INTERN – META AI Research (FAIR)** Jun – Nov 2024
Developed a text-to-image (T2I) model evaluation method leveraging multi-modal large language models (MLLMs) as evaluator agents that generate image prompts and judge generated images.
Our method's T2I model rankings match existing benchmark's rankings while using 80x less prompts and achieves higher correlations with human judgments.

**SOFTWARE ENGINEER – META**
**Gen AI: AI Generated Stickers** Dec 2022 - Aug 2023
Trained and evaluated image generation diffusion models used for AI-Generated Stickers in Messenger and WhatsApp.
Implemented automated prompt engineering to address distribution shift between users' sticker searches and image captions in training datasets, enabling sticker generation quality to reach production standards.

**Bayesian Modeling at Meta Research** Jul – Nov 2022
Bayesian modeling, with our own probabilistic programming language.
Implemented Bayesian optional stopping in Meta's A/B tests, to preemptively stop experiments that would result in metric regression, saving revenue and resources.

**Probabilistic Neural Networks at Meta Research** Jun 2020 – Jul 2022
Benchmarked and applied uncertainty quantification methods for deep learning in ranking, anti-scraping, and computer vision models in Meta products. Focused on failure prevention and signaling in out-of-distribution and adversarial data settings.

## Publications

**Jiahui Chen***, Philippe Hansen-Estruch, Xiaochuang Han, Yushi Hu, Emily Dinan, Amita Kamath, Michal Drozdal, Reyhane Askari-Hemmat, Luke Zettlemoyer, Marjan Ghazvininejad. *"Unified Text-Image Generation with Weakness-Targeted Post-Training"*. Under Review, CVPR 2025

**Jiahui Chen***, Candace Ross, Reyhane Askari-Hemmat, Koustuv Sinha, Melissa Hall, Michal Drozdal, Adriana Romero-Soriano. *"Multi-Modal Language Models as Text-to-Image Model Evaluators"*. Under Review, TMLR

**Jiahui Chen***, Amy Zhang,, Adriana Romero-Soriano. *"Augmented Conditioning Is Enough For Effective Training Image Generation"*. ICLR 2025 Workshop SynthData

Animesh Sinha*, Bo Sun*, Anmol Kalia*, Arantxa Casanova*, **Jiahui Chen**, et al. *"Text-to-Sticker: Style Tailoring Latent Diffusion Models for Human Expression"*. ECCV 2024

Hang Wang*, Sahar Karami, **Jiahui Chen**, et al. *"Training Set Cleansing of Backdoor Poisoning By Self-supervised Representation Learning"*. IEEE ICASSP 2023

**Jiahui Chen***, Joe Breen, Jeff M. Phillips, Jacobus Van der Merwe. *"Practical and Configurable Network Traffic Classification Using Probabilistic Machine Learning"*. *Springer Cluster Computing Volume 25 Issue 4*

## Awards & Honors

National Science Foundation Computer and Information Science and Engineering Graduate Fellowship (CSGrad4US), Awarded 2022

Cockrell School of Engineering Multi-Year Fellowship, Awarded 2023

## Volunteering & Leadership

**Coding Course TA – Code Tenderloin**
**2020 to 2022 –** Teaching Assistant for free introductory JavaScript courses provided by a non-profit that serves the Tenderloin community of San Francisco.

**Section Leader – Code In Place**
**2021 –** Teaching team member for a 6-week online programming course offered by Stanford University. Over 12,000 students from around the world participated.

**Undergraduate Student Advisory Committee – School of Computing, University of Utah**
**2018 to 2020 -** Faculty review and student event organization.

**Student Ambassador – College of Engineering, University of Utah**
**November 2016 to May 2020 -** Tours, outreach, and presentations leader.

**AmeriCorps Service Term**
**December 2016 to August 2017 -** 300 hour service term for a community health nonprofit.