

# ELLIE YU-HSI CHENG



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ellieyhcheng.github.io



github.com/ellieyhcheng

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## EDUCATION

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

2022 - PRESENT

PHD IN COMPUTER SCIENCE

- Advisor: Michael Carbin
- Research Focus: Probabilistic Programming Languages

UNIVERSITY OF CALIFORNIA, LOS ANGELES

2018 - 2022

BS IN COMPUTER SCIENCE AND ENGINEERING

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## HONORS AND AWARDS

COMPUTING RESEARCH ASSOCIATION (CRA) OUTSTANDING UNDERGRADUATE RESEARCHER  
AWARD HONORABLE MENTION

2022

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## INVITED TALKS

FLIP-HOISTING: A PROBABILISTIC PROGRAM OPTIMIZATION FOR EXACT INFERENCE

2021

THE INTERNATIONAL CONFERENCE ON PROBABILISTIC PROGRAMMING (PROBPROG)

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## CONFERENCE PUBLICATIONS

HOW CAN I EXPLAIN THIS TO YOU? AN EMPIRICAL STUDY OF DEEP NEURAL NETWORK  
EXPLANATION METHODS

2020

JEYA VIKRANTH JEYAKUMAR, JOSEPH NOOR, YU-HSI CHENG, LUIS GARCIA, AND MANI SRIVASTAVA. ADVANCES IN  
NEURAL INFORMATION PROCESSING SYSTEMS (NEURIPS)

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## NON-ARCHIVAL PUBLICATIONS

### FLIP-HOISTING: A PROBABILISTIC PROGRAM OPTIMIZATION FOR EXACT INFERENCE

2021

YU-HSI CHENG, STEVEN HOLTZEN, GUY VAN DEN BROECK, TODD MILLSTEIN. THE INTERNATIONAL CONFERENCE ON PROBABILISTIC PROGRAMMING (PROBPROG)

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## EXPERIENCE

### STRIPE

JUN - SEP 2022

SOFTWARE ENGINEERING INTERN

- Built pipeline for explaining machine learning models used by Stripe using SHAP in Python

### META PLATFORMS

SEP - DEC 2021

SOFTWARE ENGINEERING INTERN

- Improved AI infrastructure that serves features for machine learning models for various products, including Facebook Ads using Python and C++

### META PLATFORMS

JUN - SEP 2020

SOFTWARE ENGINEERING INTERN

- Improved ranking systems and recommendation infrastructure for Facebook Events notifications aimed at growing the Events product using primarily Hack (PHP) and SQL

### STATISTICAL AND RELATIONAL ARTIFICIAL INTELLIGENCE LAB, UCLA

JAN 2020 - JUN 2022

UNDERGRADUATE RESEARCH ASSISTANT

- Advisors: Steven Holtzen, Guy Van den Broeck, Todd Millstein
- Researched optimizations and improvements for the probabilistic programming language Dice in OCaml based on traditional compiler optimizations to reduce program compilation size and inference runtime

### NETWORKED & EMBEDDED SYSTEMS LAB, UCLA

OCT 2019 - SEP 2021

UNDERGRADUATE RESEARCH ASSISTANT

- Advisors: Luis Garcia, Mani Srivastava
- Surveyed explainability methods (Anchor, LIME, SHAP, Grad-CAM++, saliency maps) to determine which is preferred by end-users as an explanation for Deep Neural Networks performing classification tasks in different data domains (text, image, audio, sensory)