YINGBING HUANG

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EDUCATION

- **University of Illinois at Urbana-Champaign**, Urbana, IL **Aug. 2023 - Present**
  Ph.D. Student in Electrical and Computer Engineering, **GPA:** 3.89/4.0
  Advisor: Deming Chen
- **Cornell University**, Ithaca, NY **Aug. 2019 - May. 2023**
  B.S. with Honors in Computer Science (**Dean's List**, 3.76/4.0)
- **Tsinghua University**, Beijing, China **Aug. 2020 - May. 2021**
  Exchange Student in Computer Science
- **Columbia University**, New York, NY **July. 2018 - Aug. 2018**
  Summer School Student in Data Science and Machine Learning.

WORK EXPERIENCES

- **University of Illinois at Urbana-Champaign**, Urbana, IL
  Research Assistant, Electrical and Computer Engineering Department *Aug. 2023 - Present*
  Advisor: Prof. Deming Chen
- **University of Washington**, Seattle, WA
  Research Assistant, Computer Science Department *Sep. 2022 - May 2023*
  Advisor: Prof. Guanya Shi
- **MunichRe Life Insurance**, New York, NY
  Full-time Intern, Data and Machine Learning Scientist *May. 2022 - Aug. 2022*
  Advisor: Magd Bayoumi
- **Microsoft**, Beijing, China
  Full-time Intern, Machine Learning Inference *Jan. 2021 - July. 2021*
  Advisor: Wen Yang
- **Cornell University**, Ithaca, NY
  Research Assistant, Reinforcement Learning *Sep. 2021 - May. 2023*
  Advisor: Prof. Wen Sun
- **TGood**, Qingdao, China
  Full-time Intern, Machine Learning *Dec. 2020 - Jan. 2021*
  Advisor: Luda Xu

PUBLICATIONS

[1] **[NeurIPS'24] SnapKV: LLM Knows What You are Looking for Before Generation**
Yuhong Li*, **Yingbing Huang***, Bowen Yang, Bharat Venkitesh, Acyr Locatelli, Hanchen Ye, Tianle Cai, Patrick Lewis, and Deming Chen (*equal contribution)
Link: snapkv.github
The Thirty-nineth Annual Conference on Neural Information Processing Systems (NeurIPSs), 2024

[2] **[DAC'24] New Solutions on LLM Acceleration, Optimization, and Application (Invited)**
Yingbing Huang, Lily Jiaxin Wan, Hanchen Ye, Manvi Jha, Jinghua Wang, Yuhong Li, Xiaofan Zhang, and Deming Chen
The ACM/IEEE Design Automation Conference (DAC), 2024

[3] **[ASP-DAC'24] Software/Hardware Co-design for LLM and Its Application for Design Verification (Invited)**
Lily Jiaxin Wan*, **Yingbing Huang***, Yuhong Li, Hanchen Ye, Jinghua Wang, Xiaofan Zhang, and Deming Chen (*equal contribution)
The Asia and South Pacific Design Automation Conference (ASP-DAC), 2024

[4] **[ICLR'24] Adversarial Imitation Learning via Boosting**
Jonathan D Chang, Dhruv Sreenivas*, **Yingbing Huang***, Kianté Brantley, Wen Sun (*equal contribution)
The Twelfth International Conference on Learning Representations (ICLR), 2024

[5] **[NeurIPS'24] Active representation learning for general task space with applications in robotics**
Yifang Chen, **Yingbing Huang**, Simon S Du, Kevin G Jamieson, Guanya Shi
The Thirty-eighth Annual Conference on Neural Information Processing Systems (NeurIPSs), 2023

SELECTED PROJECTS

- **Controllable Generation in LLMs** *May. 2024 - Present*
  - Deliver a cause-effect analysis on LLMs with counterfactual evaluation.
  - Design a method to control LLMs generation to align human preference.
- **Self-critique of LLMs for Reasoning** *May. 2024 - Present*
  - Design a evaluation tool to better access the complex reasoning and self-critique capacity of LLMs with human feedback.
  - Design a fine-tune-free strategy to improve the reasoning ability of LLMs by utilizing human feedback.
- **Cornell Bias Lab, Team Lead** *Jan. 2021 - May. 2022*
  - Investigated the bias existing in multi-modal LLMs such as DALL-E and CLIP.
  - Designed a method to mitigate the bias, including genders, races, occupations, etc.
  - Organized two public events with more than 50 people participated to present the results and draw public attention to bias and fairness in machine learning models.
- **Data Analysis on Obituaries on the New York Times** *Sep. 2020 - May. 2021*
  - Investigated what kind of people could be on the obituaries on New York Times based on location, gender, race, achievement, etc.
  - Built an algorithm to better extract the location in the text, and analyze the relationship and change overtime among different dimensions.

AWARDS AND SCHOLARSHIPS

- UIUC **James M. Henderson Fellowship** *Sep. 2024*
- Cornell **Cum Laude (Top 15%)** *May. 2023*
- Cornell **Dean's List** *Dec. 2019 - May. 2023*

TEACHING SERVICES

- **Introduction to Computing, Teaching Assistant**
  UIUC ECE 120 *Fall 2024*
- **Algorithm, Teaching Assistant**
  UIUC ECE 374 *Summer 2024*
- **Introduction to Reinforcement Learning, Teaching Assistant**
  Cornell CS 4789 *Spring 2023*
- **Introduction to Machine Learning, Teaching Assistant**
  Cornell CS 4780 *Spring, Fall 2022*

- **Linear Algebra, Teaching Assistant**
  Cornell MATH 4310 *Fall 2021*

SELECTED COURSES

- **University of Illinois Urbana Champaign**
  ECE 543 Statistical Learning
  CS 546 Advanced Topics in NLP
  ECE 527 System-On-Chip Design
- **Cornell University**
  CS 5412 Cloud Computing
  CS 5789 Advanced Topics in Reinforcement Learning
  CS 4670 Computer Vision
  CS 4410 Operating Systems
  CS 4220 Numerical Analysis
  ORIE 4580 Stimulation Modeling & Analysis

TECHNICAL SKILLS

- **Programming Languages:** Python, Java, R, Julia, Ocaml, C++, Verilog, etc.
- **Tools:** Pytorch, Pandas, Wandb, Tableau, Jupyter Notebook, TensorFlow, Azure, Vivado/Vitis HLS, LaTeX, etc.