




## EDUCATION

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 **University of California, Los Angeles**  
Ph.D. in Computer Science, advisor: Professor Wei Wang

Los Angeles, CA, US  
Sep. 2022 – Jun. 2027 (Expected)

 **Tsinghua University**  
B.S. in Mathematics, Minor in Philosophy

Beijing, CN  
Aug. 2018–Jun. 2022

## RESEARCH INTERESTS

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- **Generative Models:** LLM (RL Post-training, Synthetic Data, Agents, Reasoning), AI for Science.
- **Machine Learning:** Reinforcement Learning, Optimization Methods.

## PROFESSIONAL EXPERIENCE

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 **Google**  
Student Researcher

Playa Vista, CA, US  
Oct. 2025 – Current

 **Scale AI**  
Post-training Research Intern

San Francisco, CA, US  
Jun. 2025 – Sep. 2025

## SELECTED WORKS (THE ASTERISK \* INDICATES EQUAL CONTRIBUTIONS)

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**Chasing the Tail: Effective Rubric-based Reward Modeling for Large Language Model Post-Training**

**Junkai Zhang\***, Zihao Wang\*, Lin Gui\*, Swarnashree Mysore Sathyendra, Jaehwan Jeong, Victor Veitch, Wei Wang, Yunzhong He, Bing Liu, Lifeng Jin  
in *submission*, available on arXiv

**DuoGuard: A Two-Player RL-Driven Framework for Multilingual LLM Guardrails**

Yihe Deng\*, Yu Yang\*, **Junkai Zhang\***, Wei Wang, Bo Li  
in *submission*, available on arXiv

## PUBLICATIONS AND MANUSCRIPTS (THE ASTERISK \* INDICATES EQUAL CONTRIBUTIONS)

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### AI for Science:

**MatSciBench: Benchmarking the Reasoning Ability of LLM in Material Science**

**Junkai Zhang\***, Jingru Gan\*, Zian Jia, Changquan Gu, Jianpeng Chen, Xiaoxuan Wang, Yanqiao Zhu, Mingyu Derek Ma, Dawei Zhou, Ling Li, Wei Wang  
in *submission*, available on arXiv

**MetaScientist: A Human-AI Synergistic Framework for Automated Mechanical Metamaterial Design**

Jingyuan Qi, Zian Jia, Minqian Liu, Wangzhi Zhan, **Junkai Zhang**, Xiaofei Wen, Jingru Gan, Jianpeng Chen, Qin Liu, Mingyu Derek Ma, Bangzheng Li, Haohui Wang, Adithya Kulkarni, Muhao Chen, Dawei Zhou, Ling Li, Wei Wang, Lifu Huang  
in *NAACL 2025 - Demo Track*

### **Protein Large Language Models: A Comprehensive Survey**

Yijia Xiao, Wanjia Zhao, **Junkai Zhang**, Yiqiao Jin, Han Zhang, Zhicheng Ren, Renliang Sun, Haixin Wang, Guancheng Wan, Pan Lu, Xiao Luo, Yu Zhang, James Zou, Yizhou Sun, Wei Wang  
in *EMNLP 2025 Findings*

### **MetamatBench: Integrating Heterogeneous Data, Computational Tools, and Visual Interface for Metamaterial Discovery**

Jianpeng Chen, Wangzhi Zhan, Haohui Wang, Zian Jia, Jingru Gan, **Junkai Zhang**, Jingyuan Qi, Tingwei Chen, Lifu Huang, Muhao Chen, Ling Li, Wei Wang, Dawei Zhou  
in *KDD 2025 Datasets and Benchmarks Track*

### **Neural network-assisted personalized handwriting analysis for Parkinson's disease diagnostics**

Guorui Chen, Trinny Tat, Yihao Zhou, Zhaoqi Duan, **Junkai Zhang**, Kamryn Scott, Xun Zhao, Zeyang Liu, Wei Wang, Song Li, Katy A. Cross, Jun Chen  
in *Nature Chemical Engineering*

### **Continuous Treatment Effect Modeling in Multi-agent Dynamical Systems**

Zijie Huang\*, Jeehyun Hwang\*, **Junkai Zhang\***, Jinwoo Baik, Weitong Zhang, Quanquan Gu, Dominik Wodarz, Yizhou Sun, Wei Wang  
in *ACM Web Conference (WWW) 2024*

## **Reinforcement Learning:**

### **Uncertainty-Aware Reward-Free Exploration with General Function Approximation**

**Junkai Zhang\***, Weitong Zhang\*, Dongruo Zhou, Quanquan Gu  
in *International Conference on Machine Learning (ICML) 2024*

### **Optimal Horizon-Free Reward-Free Exploration for Linear Mixture MDPs**

**Junkai Zhang**, Weitong Zhang, Quanquan Gu  
in *International Conference on Machine Learning (ICML) 2023*

## **Generative Models:**

### **Fast Sampling via De-randomization for Discrete Diffusion Models**

Zixiang Chen, Huizhuo Yuan, Yongqian Li, Yiwen Kou, **Junkai Zhang**, Quanquan Gu  
in *Advances in Neural Information Processing Systems (NeurIPS) 2024*

## **Optimization Methods:**

### **Why Does Sharpness-Aware Minimization Generalize Better Than SGD?**

Zixiang Chen\*, **Junkai Zhang\***, Yiwen Kou, Xiangning Chen, Cho-Jui Hsieh, Quanquan Gu  
in *Advances in Neural Information Processing Systems (NeurIPS) 2023*

## **TEACHING**

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**Teaching Assistant** at University of California, Los Angeles  
*Introduction to Computer Science I,II (CS 31/32)*  
*Introduction to Algorithms and Complexity (CS180)*

Fall 2023 - Spring 2025

## ACADEMIC SERVICES

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- **Conference Reviewer:** ICML[2025], ICLR[2024-2026], NeurIPS[2025], NAACL[2025], AAAI[2024-2025], AISTATS[2024]