

Ken Gu

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RESEARCH INTERESTS Human-AI Interaction • Data Mining • Natural Language Processing
Large Language Models on Code • Human-Centered Data Science

EDUCATION **University of Washington**, Seattle, WA September 2021 - Present
Ph.D. Student in Computer Science

University of California, Los Angeles, Los Angeles, CA March 2020
B.S. in Computer Science
GPA: 3.89/4.00, *Magna Cum Laude*

RESEARCH EXPERIENCE **University of Washington**, Seattle, WA September 2021 - Present
Research Assistant

Advisors: [Tim Althoff](#)

- Improving the scientific reproducibility of data science practices through understanding analysts' needs and developing tailored analysis tools
- Leveraging Large Language Models (LLMs) (e.g., OpenAI Codex, ChatGPT) to guide analysts' workflows

Microsoft Research, Redmond, WA June 2023 - September 2023

Research Intern in the [VIDA Group](#)

Advisors: [Chenglong Wang](#), [Steven Drucker](#)

- Developed a tailored web interface focusing on data analysts' verification needs and executed experiments to critically assess GPT-4 generated analyses
- Designed and conducted a user study to assess data analysts' understanding and verification of analyses generated by state-of-the-art Large Language Models (LLMs) [2]

Georgian, Toronto, ON, Canada June 2020 - August 2021

Applied Research Intern

Advisors: [Akshay Budhkar](#), [Chang Liu](#), [Parinaz Sobhani](#)

- Engineered and launched an [open-source Python package](#) that enhances the HuggingFace Transformers library by facilitating the integration of tabular data with transformer-based text models [W1]
- Toolkit has amassed over 43,000 downloads and is used across Georgian's portfolio companies
- Improved performance on VC deal sourcing task by 17%

University of California, Los Angeles, Los Angeles, CA January 2019 - May 2021

Research Assistant in the [UCLA Data Mining Lab](#)

Advisors: [Yizhou Sun](#), [Wei Wang](#)

- Designed a graph neural network model that leveraged a novel data view of drug-drug interaction networks [W2]
- Implemented state-of-the-art Graph Matching Networks (ICML 2019) from scratch in both TensorFlow and PyTorch as part of baseline experiments [4]

University of California, Los Angeles, Los Angeles, CA February 2018 - November 2018
Research Assistant at the [Hong Lab](#), UCLA Department of Biological Chemistry
Advisors: [Weizhe Hong](#)

- Spearheaded the utilization of computer vision deep learning models in automating the recording of mice movement in experimental video data [6]

PUBLICATIONS

In Submission

- [1] How Do Data Analysts Respond to AI Assistance? A Wizard-of-Oz Study
Ken Gu, Madeleine Grunde-McLaughlin, Andrew M. McNutt, Jeffrey Heer, Tim Althoff
[PDF](#)
- [2] How Do Analysts Understand and Verify AI-Assisted Data Analyses?
Ken Gu, Ruoxi Shang, Tim Althoff, Chenglong Wang, Steven M. Drucker
[PDF](#)

Conference Publications

- [3] Understanding and Supporting Debugging Workflows in Multiverse Analysis
Ken Gu, Eunice Jun, Tim Althoff
[CHI](#) — *ACM CHI Conference on Human Factors in Computing Systems, 2023*
- [4] Learning-based Efficient Graph Similarity Computation via Multi-Scale Convolutional Set Matching
Yunsheng Bai, Hao Ding, **Ken Gu**, Yizhou Sun, Wei Wang
[AAAI](#) — *AAAI Conference on Artificial Intelligence, 2020*
- [5] Unsupervised Inductive Graph-Level Representation Learning via Graph-Graph Proximity
Yunsheng Bai, Hao Ding, Yang Qiao, Agustin Marinovic, **Ken Gu**, Ting Chen, Yizhou Sun, Wei Wang
[IJCAI](#) — *Twenty-Eighth International Joint Conference on Artificial Intelligence, 2019*

Journal Publications

- [6] Correlated Neural Activity and Encoding of Behavior across Brains of Socially Interacting Animals
Lyle Kingsbury, Shan Huang, Jun Wang, **Ken Gu**, Peyman Golshani, Ye E. Wu, Weizhe Hong
[Cell](#) — 2019

Workshop Papers

- [W1] A Package for Learning on Tabular and Text Data with Transformers
Ken Gu, Akshay Budhkar
[NAACL MAI](#) — *NAACL2021 Workshop on Multimodal Artificial Intelligence, 2021* [[Code](#)]
- [W2] Bi-Level Graph Neural Networks for Drug-Drug Interaction Prediction
Yunsheng Bai*, **Ken Gu***, Yizhou Sun, Wei Wang
[ICML GRL+](#) — *ICML Graph Representation and Beyond, 2020* [[Code](#)]

TEACHING EXPERIENCE

- Head TA**, [Machine Learning for Big Data](#) (CSE 547), University of Washington Winter 2023
- Head TA**, [Machine Learning for Big Data](#) (CSEP 590A), University of Washington Spring 2022
- Math and Physics Tutor**, *Self-started*, Vancouver, BC, Canada June 2020 - May 2022
- Tutoring Chair**, *Upsilon Pi Epsilon Honor Society*, UCLA May 2018 - June 2020

SKILLS	Programming	<i>Most Familiar:</i> Python, TypeScript, JavaScript <i>Familiar:</i> R, C, C++, Java, SQL
	ML Tools	PyTorch, TensorFlow, HuggingFace, NumPy, Keras, Scikit-learn, XGBoost, Statsmodels
	Web Interface	JupyterLab Extensions, React, HTML, CSS
	Environments	Linux, Windows, AWS, Docker
COURSE WORK	AI/ML	Deep Learning, Empirical Foundations of Machine Learning, Natural Language Processing, Artificial Intelligence, Artificial Intelligence (AI) vs Intelligence Augmentation, Large Scale Networks and Reinforcement Learning, Data Mining
	Miscellaneous	Data Visualization, Probability, Optimization, Databases