Kenneth Lee

CONTACT INFORMATION

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RESEARCH INTERESTS

Causal inference, causal discovery, machine learning

EDUCATION

Purdue University

Ph.D. in Electrical and Computer Engineering — 2021 - Present
Advisor: Murat Kocaoglu

University of California, Davis

M.S. in Statistics — 2019 - 2021
Advisor: Norm Matloff, James Sharpnack

Brigham Young University—Hawaii

B.S. in Mathematics, Computer Science — 2014 - 2018

RESEARCH EXPERIENCE

Purdue University Causal Machine Learning Lab
Lab member — Aug 2021 - Present

- *Causal Machine Learning:* Researching on where causal inference and discovery could benefit the current machine learning methods.
- Supervisor: Murat Kocaoglu

Purdue University Superpower Group
Research Assistant — Aug 2021 - Jun 2022

- *Power Analysis:* Developed new methods for power analysis, utilizing data simulation and innovations in generalizability theory, guided-walk, and machine learning techniques. [**Link to project**].
- Supervisor: Erin Hennes, Sean Lane

University of California, Davis
Researcher — Oct 2020 - May 2021

- *Machine Learning:* Researching on an alternative to a probability calibration method named Platt scaling [**Link to project**].
- *Data Science:* Researching on an alternative to resampling techniques in dealing with unbalanced class data.
- Supervisor: Norm Matloff

Carnegie Mellon University, Delphi Epi-Forecasting Group
Researcher — Sep 2020 - Feb 2021

- *Causal Inference:* Studied the impact of government interventions on mobility under confounders in US using Delphi EpiData API. [**Link to project**].
- Presented the work at 2020 NSF Student Conference on COVID19 Modelling.
- Advisor: James Sharpnack, Larry Wasserman, Valerie Ventura

Brigham Young University—Hawaii Institutional Research
Research Analyst Intern — Aug 2018 - Jun 2019

- *Consulting:* Leveraged 11-year data from enrollment, degree completion, freshman cohort, and curriculum to conduct retention study for BYU—Hawaii President's council.
- *Data Visualization:* Built pipelines to update Tableau Server workbooks automatically from Quartics surveys.
- *Database Management:* Coordinated with the Enterprise Information System department at BYUH to establish a data warehouse to facilitate institutional research.
- *Data Cleaning:* Trained and supervised students workers on the data cleaning and visualization with R and Tableau.
- Status: Part-Time
- Working hours: 27 hours per week
- Supervisor: Kathy Pulotu

Research Assistant Supervisor — Sept 2017 - Jun 2018

- *Literature reviews:* Conducted literature reviews for designing new graduating student survey.
- *Data Visualization:* Built a data dashboard from cleaning course evaluation survey data of the past 5 years in R to visualizing the data via Tableau for the school administration and faculty.
- *Statistical Analysis:* Evaluated the redundancy of the graduating student survey questions by using factor analysis.
- *Survey Design:* Led a poster publication titled *"How Meaningful Is Our Graduating Student Survey"* to showcase how to better evaluate survey design.
- Status: Part-Time
- Working hours: 19 hours per week
- Supervisor: Kathy Pulotu

Brigham Young University IDeA Labs

Researcher Intern — Jun 2017 - Aug 2017

- *Systems Theory:* Research in Systems and Control Theory with applications in a variety of areas including social networks, natural language processing, and biological systems.
- *Software Engineering:* Tasks involve developing code, modeling networks, analyzing simulations, developing theoretical results and writing research papers.
- Advisor: Sean Warnick
- Status: Full-Time
- Working hours: 40 hours per week

Professional Experience

Amazon

Data Scientist Intern — Jun 2025 - Aug 2025

- Status: Full-Time

Purdue University - Engineering Undergraduate Research Office (EURO)

Graduate Assistant - Online Communication Specialist — Jan 2024 - May 2024

- *Social Media Management:* Enhanced traffic to EURO's LinkedIn posts and website through targeted content strategies.
- Developed and improved EURO's website, ensuring an engaging and user-friendly experience.
- Held regular office hours to address student inquiries and provide detailed information on EURO's programs.

- **Status:** Part-Time

Purdue University - Department of Computer Science
Graduate Research Assistant — Jan 2023 - Dec 2024
- *Causal Discovery:* Research on causal discovery methods for manufacturing data in Bruno Riberio's lab.
- Status: Part-Time

Purdue University - College of Engineering
Graduate Assistant - Data Administrator — Aug 2022 - Jan 2023
- *Database management and reporting:* Queried data from the database of the College of Engineering and created visualizations for comparing faculty performance and student admissions across various universities in U.S.
- Status: Part-Time

Genentech
AI Intern for Causal ML — May 2024 - Aug 2024
- *Causal Discovery:* Led a project from start to finish on causal discovery and experimental design across multiple domains. Analyzed the in-silico single-cell gene regulatory network dataset called DREAM4 based on the developed causal discovery algorithm.
- Status: Full-Time

Bayer
Data Scientist Intern — Aug 2022 - Dec 2022
- *Causal Modeling:* Modeled the heterogenous treatment effects of various environmental factors and human practices to crop emergence with EconML and doWhy python packages.
- Status: Part-Time

Experian DataLabs
Data Scientist Intern — May 2022 - Aug 2022
- *On-chain Analysis:* Analyzed on-chain credit risks in cryptocurrency exchange and defi systems.
- Status: Full-Time

Newday Impact Investing
Data Analytics Intern — Jun 2020 - Aug 2020
- *Machine Learning:* Selected companies from S&P 500 that account for the variance of stock price based on principal component analysis to aid decisions making on portfolio construction with back-testing.
- Status: Part-Time

Dell EMC
Associate Consultant Intern — Jun 2019 - Sep 2019
- *System Testing:* Designed and implemented test cases using MS SQL Server for the human resources manpower information system of Hong Kong Vocational Training Council.
- Status: Full-Time

Teaching Experience

Purdue University
Graduate Teaching Assistant — Aug 2023 - Dec 2023

- ECE 36900 Discrete Mathematics for Computer Engineering

University of California—Davis
Teaching Assistant — Sep 2019 - Mar 2021

- Graduate Level
  - BAX 453 Application Domains (Spring 2021)
  - BAX 452 Machine Learning (Winter 2021)
  - BAX 441 Intermediate Statistics (Fall 2020)
  - BAX 400 Foundation of Business Analytics (Summer 2020)
  - BAX 463 Practicum Analysis & Implementation (Spring 2020)
- Undergraduate Level
  - Statistics Bootcamp on R (Summer 2020)
  - 12Y Data Visualization for Social Sciences (Fall 2019, Winter 2020)

Brigham Young University—Hawaii
Computer Science Substitute Instructor — 2017

- CS301: Algorithms and Complexity.

Math Lab Tutor (Calculus) — 2015 - 2016

Publications

Journals

[J1] Reinhart, Alex, et al. *An open repository of real-time COVID-19 indicators.* Proceedings of the National Academy of Sciences 118.51 (2021).

Conference Proceedings († equal contributions)

[C4] A. Ikram†, **K. Lee**†, S Mitra, S Saini, S Bagchi, M. Kocaoglu. *Root Cause Analysis of Failures from Partial Causal Structures*, The Conference on Uncertainty in Artificial Intelligence, Rio de Janeiro, Brazil, 2025.

[C3] **K. Lee**, B. Ribeiro, M. Kocaoglu. *Constraint-based Causal Discovery from a Collection of Conditioning Sets*, The Conference on Uncertainty in Artificial Intelligence, Rio de Janeiro, Brazil, 2025.

[C2] **K. Lee**, M. Rahman, and M. Kocaoglu, *Finding Invariant Predictors Efficiently via Causal Structure*, The Conference on Uncertainty in Artificial Intelligence, Pittsburgh, PA, 2023.

[C1] V. Chetty, N. Woodbury, J. Brewer, **K. Lee** and S. Warnick, *Applying a Passive Network Reconstruction Technique to Twitter Data in Order to Identify Trend Setters*, IEEE Conference on Control Technology and Applications, Kohala Coast, HI, 2017.

Workshop

[W2] **K. Lee**, and M. Kocaoglu, *RCPC: A Sound Causal Discovery Algorithm under Orientation Unfaithfulness*, Causal UAI workshop, The Conference on Uncertainty in Artificial Intelligence, Barcelona, Spain, 2024.

[W1] **K. Lee**, B. Ribeiro, and M. Kocaoglu, *Constraint-based Causal Discovery from a Collection of Conditioning Sets*, Causal UAI workshop, The Conference on Uncertainty in Artificial Intelligence, Barcelona, Spain, 2024.

Posters

[P3] **K. Lee**, S. Fuluvaka, *Meet Don, the Autonomous Dice Rolling Machine*, Brigham Young University-Hawaii Undergraduate Research Conference, 2018.

[P2] **K. Lee**, K. Pulotu, *Graduating Student Survey Revision: A student effort*, California Association for Institutional Research, Garden Grove, CA, 2018.

[P1] K. Pulotu, **K. Lee**, T. Vallabh, Hong Ni M. and R. Ram, *How Meaningful is our Graduating Student Survey?*, Academic Resource Conference, Burlingame, CA, 2018.

Professional Service

Reviewer (NeurIPS 2023, AAAI 2024, ICLR 2024, AISTATS 2024, ICML 2024, UAI 2024, ACML 2024, AAAI 2025, ICLR 2025, AISTATS 2025, ICML 2025, UAI 2025, NeurIPS 2025, AAAI 2026, AISTATS 2026, ICLR 2026)

Presentations

NSF Student Conference on COVID19 Modelling — Jan 2021

Selected Honors

Annual Conference on Neural Information Processing Systems (NeurIPS)
Top Reviewer — 2025

International Conference on Learning Representations (ICLR)
Notable Reviewer — 2025

Society for Artificial Intelligence and Statistics (AISTATS)
Top Reviewer — 2025

Association for Uncertainty in Artificial Intelligence (UAI)
Top Reviewer — 2024
UAI Scholarship — 2023, 2025

Purdue University
Purdue Graduate Student Government Travel Grant — 2023

Brigham Young University—Hawaii
Computer and Information Science Overall Outstanding Graduate **(Top 1 of the graduating class)** — 2018
Undergraduate Research Best Oral Presentation Award **(1 out of 30 peer research teams)** — 2018
Computer Science Alumni Scholarship **(Nominated by faculty)** — 2017 - 2018
Mathematics Departmental Scholarship **(Nominated by faculty)** — 2014 - 2018
Academic Merit Scholarship **(Top 5% of the school)** — 2014 - 2018
University Dean's List **(Top 5% of the school)** — 2014 - 2018
Hong Kong Student Association Leadership Certificate — 2015 - 2016
BYUH Student Leadership Award — 2015

Association for Computing Machinery

ACM/UPE Scholarship Award **(4 out of all the ACM student members)** 2017

Honorable Mention - International Collegiate Programming Contest (Pacific Northwest Region) 2016

The National Society of Leadership and Success

Academic Excellence Scholarship **(12 out of all the NSLS inducted members)** 2017

The Honor Society of Phi Kappa Phi

Love of Learning Award 2019

Professional Affiliations

Eta Kappa Nu, Member	2021 - Present
The National Society of Leadership and Success, Member	2017 - Present
Phi Kappa Phi, Member	2016 - Present
Association of Computing Machinery, Member	2016 - Present
Upsilon Pi Epsilon, Member	2016 - Present

Certifications

Deep Learning Specialization, deeplearning.ai	Jun 2019
Machine Learning by Stanford University, Coursera	Mar 2019
Tableau Desktop Specialist, Tableau Software	Feb 2019

Skills

Language: English (Fluent), Cantonese (Native), Mandarin (Fluent)
Programming Language: Python, R, MATLAB, SQL
Framework: , Pytorch, Keras, OpenCV, Scikit-learn, TensorFlow, Dlib
Other: Tableau, AWS EC2, AWS Dynamodb, AWS S3

References

- Academia:
  - **Dr. Murat Kocaoglu**, Assistant Professor, Purdue University
    - Field of study: Causal Inference, Causal Discovery, Machine Learning
    - Relationship: Ph.D. advisor
    - Email: `mkocaoglu@purdue.edu`