

Kenneth Lee

CONTACT INFORMATION

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RESEARCH INTERESTS

Causal inference, reinforcement learning, deep learning, meta-learning, robotics

EDUCATION

Purdue University

Ph.D. in Electrical and Computer Engineering 2021 - 2026
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 Superpower Group

Research Assistant Aug 2021 - Present

- *Power Analysis*: developing 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

PROJECTS

Understanding the resting behaviors of Trirectangular Tetrahedral and Triangular Prism Dice Rolls

- *Computer Vision:* Applied Faster Regional-Convolutional Neural Networks (RCNN) in Python to count dice rolls more efficiently by object detection.
- *Robotics:* Configured a dice rolling machine from scratch to automate the process of dice rolling and reduce bias that may come from rolling dice by hand.
- *Software Engineering:* Rewrote codes from MATLAB image processing toolbox to Python using OpenCV, scikit-image and dlib libraries.
- The project got turned into a paper in 2020. [[Link to paper](#)]
- Duration: 2017- 2019
- Number of hours per week of effort: 3
- Advisor: Paul Hurst

Predict Patient Inflow at Pali Momi Hospital’s Emergency Room

- *Machine Learning*: Applied quantile regression model to predict patient inflow at Pali Momi Hospital's Emergency Room (ER).
- *Consulting*: Provided recommendations for how to optimize scheduling for their ER's doctors and mid-level providers.
- Duration: Apr-Jun 2018
- Number of hours per week of effort: 2
- Advisor: Cody Baldwin

PROFESSIONAL EXPERIENCE

Newday Impact Investing

Investment Analyst

Sep 2020 - May 2021

- *Deep Learning*: Leveraged partner company's sustainable portfolio data by transfer learning to increase F1-score from 0.5 to 0.75 on classifying 1:16 imbalanced sustainable companies based on metrics developed by Newday.
- Status: Part-Time
- Working hours: 20 hours per week

Data Analytics Intern

Jun 2020 - Sep 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: Full-Time
- Working hours: 40 hours per week

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
- Working hours: 40 hours per week

TEACHING EXPERIENCE

University of California—Davis

Teaching Assistant

Sep 2019 - Mar 2021

- Graduate Level
 - BAX 422 Data Design and Representation (Winter 2021)
 - BAX 441 Statistical Exploration and Reasoning (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	Conference Proceedings	
	V. Chetty, N. Woodbury, J. Brewer, K. Lee and S. Warnick, <i>Applying a Passive Network Reconstruction Technique to Twitter Data in Order to Identify Trend Setters</i> , IEEE Conference on Control Technology and Applications, Kohala Coast, HI, 2017.	
	Posters	
	K. Lee , S. Fuluvaka, <i>Meet Don, the Autonomous Dice Rolling Machine</i> , Brigham Young University-Hawaii Undergraduate Research Conference, 2018.	
	K. Lee , K. Pulotu, <i>Graduating Student Survey Revision: A student effort</i> , California Association for Institutional Research, Garden Grove, CA, 2018.	
	K. Pulotu, K. Lee , T. Vallabh, Hong Ni M. and R. Ram, <i>How Meaningful is our Graduating Student Survey?</i> , Academic Resource Conference, Burlingame, CA, 2018.	
SELECTED HONORS	Brigham Young University—Hawaii	
	Computer and Information Science Overall Outstanding Graduate	2018
	(Top 1 of the graduating class)	
	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	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	<i>Language:</i> English (Fluent), Cantonese (Native), Mandarin (Fluent)	
	<i>Programming Language:</i> Python, R, MATLAB, SQL	

Framework: , Pytorch, Keras, OpenCV, Scikit-learn, TensorFlow, Dlib
Other: Tableau, AWS EC2, AWS Dynamodb, AWS S3

REFERENCES

- Academia:
 - **Dr. Norm Matloff**, Professor, UC Davis
 - * Field of study: Probability, Functional Analysis and Statistics
 - * Relationship: Project advisor
 - * Phone: 530-752-1953, Email: matloff@cs.ucdavis.edu
 - **Dr. James Sharpnack**, Assistant Professor, UC Davis
 - * Field of study: Statistics, Machine Learning
 - * Relationship: Project advisor, a teacher in multiple classes
 - * Phone: 530-341-3981, Email: jsharpna@ucdavis.edu
 - **Dr. Vasu Chetty**, Principal Data Scientist, Lucid Software Inc.,
 - * Field of study: Computer Science
 - * Relationship: Thesis advisor, a teacher in multiple classes
 - * Phone: 808-589-9586, Email: vasuc@lucidchart.com
 - **Dr. Sean Warnick**, Professor, Brigham Young University,
 - * Field of study: Network Systems and Control
 - * Relationship: Summer research internship supervisor
 - * Phone: 801-422-6463, Email: sean@cs.byu.edu
 - **Dr. Paul Hurst**, Associate Professor, Brigham Young University—Hawaii,
 - * Field of study: Mathematics
 - * Relationship: Research advisor, a teacher in multiple classes
 - * Phone: 808-675-3802, Email: hurstp@byuh.edu
 - **Dr. Joel Helms**, Professor, Brigham Young University—Hawaii,
 - * Field of study: Mathematics
 - * Relationship: A teacher in multiple classes
 - * Phone: 808-675-4704, Email: joel.helms@byuh.edu
- Employment:
 - **Ms. Kathy Pulotu**, Institutional Research and Assessment Manager, Brigham Young University—Hawaii,
 - * Relationship: Direct supervisor
 - * Email: kathy.pulotu@byuh.edu
 - **Dr. Rose Ram**, Associate Academic Vice President Curriculum and Assessment, Brigham Young University—Hawaii,
 - * Relationship: Indirect supervisor
 - * Email: rose.ram@byuh.edu