Vanessa Lin

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Education

University of California, Berkeley — *Berkeley, CA*

B.A. Computer Science, B.A. Applied Math | GPA: 3.737/4.00 | Activities: UPE: CS Honors Society, EECS Honors Program — *August 2017 - May 2021*

- Completed Coursework: Machine Learning, Operating Systems, Database Systems, Artificial Intelligence, Algorithms, Data Structures, Machine Structures, Discrete Mathematics and Probability, Multivariable Calculus, Linear Algebra
- In-progress Coursework*: Real Analysis, Computational Photography, Abstract Algebra

Experience

RISELab: Real-time Intelligent Secure Explainable — *Berkeley, CA*

Undergraduate Researcher | Electrical Engineering and Computer Science Dept — *February 2018 - Present*

Koopman Theory and Autoencoders — *August 2019 - Present*

- Exploring stability using linear algebra techniques and recurrent neural networks with postdoctoral fellow, N. Benjamin Erichson and Professor Michael Mahoney
- Building a physically-based variational autoencoder to improve control of non-linear dynamical systems and high dimensional dependent problems

E-mission — *February 2018 - August 2019*

- Designed a study that promotes sustainable transportation habits around campus and the city of Berkeley and looks at normative behavioral patterns towards automated suggestions using the E-mission platform under K.Shankari, PhD candidate, Professor David Culler, and Professor Randy Katz
- Recruited a dataset of approximately 15 people to test and share their opinions on the application's usability and design

Google — *Mountain View, CA*

Software Engineering Intern — *May 2020 - August 2020*

- PGP Search Ads team

Google — *Cambridge, MA*

Engineering Practicum Intern — *May 2019 - August 2019*

- Developed a hotel cancellation feature in which 1M+ users will be able to use for Book on Google, which is a platform that facilitates hotel booking on Google without breaking the search flow, using Java, Javascript, and Google Web Server

Sandia National Laboratories — *Livermore, CA*

Research and Development: Software Developer Intern — *June 2018 - January 2019*

Project on Nuclear Gaming — *August 2018 - January 2019*

- Developed an interactive data collection web app for the game SIGNAL (https://pong.berkeley.edu/e-game/) for proctors to input data collected from board game rounds and facilitate analysis of nuclear deterrence and conflict escalation
- Built application with React and MongoDB to keep track of diplomatic and economic actions for further data analysis

Capabilities Development Framework (a Web GIS App) — *June 2018 - August 2018*

- Added capabilities to the app for the Department of Homeland Security, using OpenLayers, GeoServer, SQL, JavaScript, and PHP, to incorporate live data-streaming with temperature data

Publications

Forecasting Sequential Data using Consistent Koopman Autoencoders

Omri Azencot*, N. Benjamin Erichson*, **Vanessa Lin**, Michael W. Mahoney — *Accepted to ICML 2020*

In this work, we propose a novel Consistent Koopman Autoencoder model which, unlike the majority of existing work, leverages the forward and backward dynamics. The key to our approach is a new analysis that unravels the interplay between consistent dynamics and their associated Koopman operators.

Projects

Parkmark — *Hacktech*

github.com/valin1/live-scroll-view — *March 2018*

- Developed a heat-map based application to provide real-time traffic for places like parking spaces and restaurants using Google Map's API

OmniTraffic — *CalHacks*

github.com/valin1/omni-uber-visualization — *November 2018*

- Used OmniSci's Cloud Analytics and deck.gl (WebGl-powered framework) to find times of frequent traffic in various public transportation routes, with Uber Movement Data and visualize data analytics

Skills and Qualifications

Languages/Libraries

Python, Java, TensorFlow, HTML/CSS, JavaScript, PHP, Android, AWS, Git, LaTeX, Vim