

# DAN LIYANAGE

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**Machine Learning Scientist at PayPal. Ph.D. in physics, Enjoy using ML and data analysis methods to tackle complex challenges. Enthusiastic about generative AI, causal inference, and experimentation.**

## SKILLS

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**Programming Languages** *Proficient:* Python *Familiar:* C++ | Bash | SQL | Matlab  
**Frameworks & Libraries** Jupyter | Pandas | Scikit-learn | PyTorch | DoWhy | BigQuery | Git | Docker  
**Collaborations** Multi-institutional/discipline research collaborations: JETSCAPE | BAND  
**Effective Communication** Hazel Brown teaching award | Mentor-Erdős Data Science 2020/21  
**Probability & Statistics** Bayesian inference | Uncertainty quantification | Predictive modeling

## PROJECTS

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### **Taweret Open source Bayesian model mixing package** 2023

- Guided a team in developing a Python package on Github that combines various models' individual local performances to create an enhanced predictive model.
- Performed robust statistical inference and model calibration using multiple models against large experimental data sets

### **PhD Data Science Intern at PayPal** 2022-Summer

- Gathered and processed PayPal consumer data in BigQuery using SQL
- Applied Causal Machine Learning techniques to understand the effect of churn related incentives
- Provided actionable insights for the marketing team using Shapley values from Explainable AI

### **Efficient emulation of large scale simulations using transfer learning techniques** 2021

- Applied transfer learning techniques to develop machine learning surrogates with improved efficiency and reduced error
- Optimized computation to run 8x faster using machine learning

### **Erdős data science bootcamp - Best Project Award** 2019-Summer

- Gathered and processed thousands of recordings of birdsongs in mp3 format
- Feature engineered audio data by employing digital signal processing and data visualization methods
- Constructed and trained a machine learning classifier achieving high accuracy of 83%

### **Machine vision system for reconnaissance applications - Best Project Award** 2015

- Built self-navigating omnidirectional holonomic robot with a stereo machine vision system

## EDUCATION

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The Ohio State University	<b>Ph.D in Physics</b>	2017-2023
University of Peradeniya	<b>B.Sc. in Electrical Engineering</b>	2011-2015

## HONORS & SERVICES

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- Mentored six projects in the Erdos data science bootcamp in 2021,2022
- Won the Hazel Brown teaching award at OSU for two consecutive years (2020,2021)
- Represented Physics Graduate students in the Climate and Diversity Committee at OSU in 2020
- Won a Bronze medal in the International Physics Olympiad in 2011