

I am a physicist turned data scientist who is a problem solver at heart. I am driven by the desire to tackle daunting tasks and grow as a scientist. My diverse background has introduced me to a multitude of complex challenges and taught me how to be creative in finding solutions. I use these skills to bring a unique perspective to data science.

Experience

LEAD DATA SCIENTIST | LION STUDIOS | APRIL 2022 – APRIL 2023 | REMOTE

- Managed a team of data scientists building and implementing machine learning models to optimize player experience in casual mobile games, player monetization, and advertisement spend and insights.
- Built and deployed ground up modified multi-armed bandits, improving D1 player engagement by 10%.
- Made BI dashboards in Looker and helped PMs with running, interpreting, and visualizing AB tests and user experiments.
- Developed game agnostic ensemble model for identifying quality users to optimize ad campaigns.
- Assisted in development of time series forecasting, player behavior predictions, churn predictions, causal impact, reinforcement learning, and gauging feature importance.

GRADUATE RESEARCHER | UC IRVINE | AUGUST 2015 – DECEMBER 2020

- **Super Kamiokande** – *Nobel Prize Winning Neutrino Experiment* **Gifu Prefecture, Japan**
 - Implemented data science and statistical methods to analyze over 10 years of data for Super Kamiokande
 - Invented multiple new methods for identifying and removing dominant background using a pure data and statistical driven approach.
 - Performed error identification, bug fixes and work arounds on a messy, never analyzed data set.
 - Reduced signal loss from accidental removal by a factor of two, recovering a year of signal data.
- **CAPTAIN** – *LAr Detector for Neutrino Related Cross-Section Measurements* **Los Alamos, NM**
 - Studied calibration data to model detector signal response for better implementation in Monte Carlo
 - Maintained Data Acquisition (DAQ) system, wrote shell scripts, C++ programs, performed hardware work to improve stability, and implemented run automation. Reduced worker input by >95% and doubled data collection rate.

Skills & Abilities

PROGRAMMING: C++, FORTRAN, Linux, pyspark, python, SQL, AWS, TensorFlow, pandas, scikit-learn, Git

DATA ANALYSIS: Bayesian and frequentist statistics, machine learning, regression, classification, A/B testing, clustering, supervised and unsupervised learning, multi-armed bandits

COMMUNICATION: Data visualizations, fluent English, basic Mandarin and Spanish

Projects

2 CLASSIFICATION PROJECTS

- Predicting animal shelter outcomes and identifying subreddits with NLP, engineered features and built/optimized ~5 models for each.

1 REGRESSION PROJECT

- Built model predicting housing prices in Ames, IA, creatively engineered features and chose features to avoid over fitting.

2 NEURAL NET PROJECTS

- Used CNNs and Mask RCNNs to identify tumors in mammograms, identify and classify from 43 signs in a large image.

Education

DATA SCIENCE IMMERSIVE | SEPTEMBER 2021 | GENERAL ASSEMBLY

- Immersive Data Science program geared towards learning business data science skills.

PHD PHYSICS | DECEMBER 2020 | UC IRVINE | 3.91 GPA

- Thesis: *New Methods to Reduce Cosmogenic Backgrounds of Super-Kamiokande in the Solar Neutrino Energy Regime*
- Invited to talk at TeVPA 2017, talks at APS DPF 2017/TAUP 2019 (2), poster Neutrino 2020, co-author on 20+ publications.

B.S. PHYSICS | MINOR MATH | AUGUST 2012 | UNIVERSITY OF WASHINGTON | 3.72 GPA

- Conducted structural tests and analysis of results, and fabrication of carbon fiber tubes for use at the Large Hadron Collider