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U.S. Citizen

Jacky Lao

Education

2015 – 2019

Carnegie Mellon University, *B.S. Materials Engineering, Statistics & Machine Learning (Double Major)*, Pittsburgh, PA.
GPA - 3.73

Experience

2017

Summer Intern, Sandia National Laboratories, Livermore, CA.
- Implemented a Transitional Markov Chain Monte Carlo algorithm in C++
- Developed a variant of the algorithm to identify distribution modes using a clustering analysis
- Combined algorithm with Langevin dynamics for four-fold effectiveness in high-dimensional distributions
- Analyzing the TMCMC algorithm's effectiveness in high-dimensional, multimodal, and manifold problems

2016

Research Assistant, Carnegie Mellon Univeristy, Pittsburgh, PA.
- Assisted Sudipto Mandal of the Rollett Group on projects involving analysis of stress test simulation data
- Wrote R scripts and m-files to analyze the accuracy of microstructure generation algorithms
- Performed canonical correlation analysis on evpFFT data to quantify feature relationships
- Built a data-driven pipeline in Python and R that automated data collection and analysis
- Implemented batch processing functionality for the stochastic microstructure modeling software

2015 – 2017

Production Manager, Carnegie Mellon University, Pittsburgh, PA.
- Streamlined rehearsal room reservation process and shortened average waiting times by 30 minutes
- Scheduled major checkpoints and ensured execution of milestones
- Facilitated conversations between board of directors and production board
- Developed contingencies for problems that would negatively affect production

Papers and Projects

2016

Projects in Rollett Group, Carnegie Mellon University, Pittsburgh, PA.
- Sudipto Mandal, Yu Feng, Jacky Lao, Don Shih, Anthony D. Rollett, "Characterization and 3D Modeling of Microstructure and Texture in Two-phase Titanium Alloys" (2017) 28th AeroMat, Charleston, SC.
- Application of data mining and data science techniques to microstructural data
- Image analysis and processing of micrographs of titaniun alloys

2017

Finalist - Tartan Data Science Cup, Carnegie Mellon University, Pittsburgh, PA.
- Prototyped a gradient boosted decision tree model in R, in six hours
- Made predictions of loan statuses from an imbalanced dataset presented by Capital One

Technical Skills

Proficient: Python, C++, R, MATLAB, LaTeX, SML-NJ
Familiar: PostgreSQL, Git, Linux Shell

Relevant Coursework

Machine Learning*, Artificial Intelligence*, Statistical Visualization*, Probability Theory, Functional Programming, Imperative Programming, Differential Equations, Concepts of Mathematics

*Currently Taking