Nicholas Jin

Data Scientist | Physicist | Security Enthusiast

My background is in mathematics, physics, computer science, and simulation. My research in computational physics grounds my modeling with strong physical intuition, and I am eager to tackle diverse data science challenges with my programming skills and scientific expertise.

EXPERIENCE

General Assembly | Data Science Fellow

BOSTON, MA | DEC 2019 - MAR 2020

Built both inferential statistical models and predictive machine learning models using over 50 datasets during 480+ hour, 12 week course. Integrated data science workflow Communicated outcomes of 6 technical projects to peers of diverse backgrounds.

Carnegie Mellon University | PhD Candidate

PITTSBURGH, PA | JUL 2014 - AUG 2018

Built analytic model describing twist and curvature interactions in biofilaments. Simulated model with coarse-grained molecular dynamics. Verified model by analyzing time series trajectories with ensemble statistics. Simulated barrier-crossing problems with MCMC.

EDUCATION

Carnegie Mellon University | M.S. Physics

SEP 2014 - MAY 2018

Princeton University | B.A. Physics

SEP 2010 - JUN 2014

FEATURED PROJECTS

Intrusion Detection | Incremental Learning, Cybersecurity

Built an Intrusion Detection System that classified the KDD99 dataset with over .995 ROCAUC, utilizing incremental learning to train models on streaming data. Compared and benchmarked isolation forests and half-space trees on the HTTP99 dataset.

Network Robustness | Geospatial Processing, Graph Theory

Constructed flow network modelling Massachusetts electrical grid using geospatial data. Quantified risk to network from random failures with percolation models. Identified potential points of failure in the face of adversarial attacks.

Subreddit Classification | NLP, Web Scraping

Built a natural-language classifier that predicted whether an absurd news headline came from The Onion or from a reputable news source. Achieved an accuracy of 80+% using a logistic regression classifier.

CONTACT

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SKILLS

Programming:
Python, SQL, Julia, Scala

Data Wrangling:
Numpy, Pandas, Web Scraping, Data Cleaning, Exploratory Analysis, Feature Selection, Feature Extraction

Machine Learning / AI:
Keras, Tensorflow, Sklearn, Regression, GLM, KNN, SVM, Ensemble Learning, Decision Trees, Clustering, Random Forests, Manifold Learning, Naive Bayes, Online Learning, Neural Networks, CNNs, GANs, Reinforcement Learning

Communication/ Data Visualization:
Matplotlib, Seaborn, Mathematica, LaTeX

Cloud Computing:
Unix, AWS, GPU computing

Mathematics:
Linear Algebra, Vector Calculus, Statistics, Complex Analysis, Differential Geometry

Simulation/Modeling:
Monte Carlo, MCMC, Molecular Dynamics, Time Series Analysis