KENT GANG

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EDUCATION

University of Illinois at Urbana-Champaign December 2017
B.S. Engineering Physics with Honors GPA 3.64/4.00
Concentration in Computational Physics, Mathematics Minor

WORK EXPERIENCE

Fannie Mae - Capital Markets Analytics
Financial Economist I June 2017 – April 2019

- Use SQL queries to pull massive financial datasets and time series from Oracle and Netezza databases. Datasets were on the order of several million observations. Provide quality assurance of quarterly reported values to executive management on aggregate securities' performance.
- Develop and improve interactive Tableau dashboards computing Conditional Prepayment Rates (CPR) and other time series for Mortgage Backed Securities (MBS), Mega pools, and Servicers. Receive use case ideas from capital markets team members and manage projects end-to-end.
- Develop and test Mortgage Backed Securities (MBS) time series forecast predictions and other machine learning models with techniques such as logistic regression, decision trees, k-means clustering, random forests, Kalman filtering, and neural networks.
- Model Credit Risk Transfer (CRT) transactions in Python with Pandas and NumPy, accounting for deal terms such as maturity, delinquency and prepayment triggers, interest rate spreads, and sizing. Lead the development of an automated Python application, CRTpy, for deal modeling alongside subject matter experts, duplicating INTEX functionality (cost of $10k/person/month). Provide recommendations on the structure and valuation of securities. Visualize results with MatPlotLib, Excel or Tableau.
- Provide ad hoc analysis related to macroeconomic conditions or historical trends at behest of other divisions and the conservator, FHFA. Reverse-engineer Excel Pivot tables and vlookup functions into reports and analysis with Tableau or Python.
- Interface with, execute and review other's work in R and SAS. Modify RShiny web apps with HTML/CSS and unit test for logic. Create POCs in Python with Flask.

RESEARCH EXPERIENCE

Kwiat Quantum Information Group September 2014 – November 2015
Undergraduate Research Assistant

- Program image alignment software in MatLab for noisy data transfer experiment.
- Study characteristics of a fiber optic cable fusion splicer.
- Assist with the polishing of fiber optic cables, laser alignment, and other preparations.

Fe, Co, Ni Adatoms Adsorbed on Silicene: A DFT Study September 2012 – September 2013
Primary Author

- Studied electromagnetic properties of silicene using *Quantum Espresso*, a computational tool implementing Density Functional Theory (DFT).
- http://digitalcommons.imsa.edu/cgi/viewcontent.cgi?article=1008&context=student_pr

SKILLSETS

Python Pandas |NumPy | MatPlotLib | Scikit-Learn | Flask/Django
Other Tableau | R | SQL | SAS | VBA (Excel) | Bash/Linux | HTML/CSS/JavaScript