

XIN LI

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EDUCATION

Florida State University	Ph.D. in Applied Mathematics	2020
Florida State University	M.S. in Financial Mathematics	2016
Northeastern University	M.S. in Applied Mathematics	2013
Hebei Normal University	B.S. in Mathematics	2010

EMPLOYMENT

Florida State University May 2018 - Present
Teaching Assistant

- Taught Pre-Calc Algebra, Calculus I, Calculus III, Discrete Math, Business Calculus and Financial Risk Management (graduate level) to over 500 students.
- Mentored and lead 10 Ph.D. student instructors in teaching Calculus.

Raytheon BBN Technologies, Cambridge, MA May 2013 - August 2013
Research Scientist, Intern

- Conducted research on Information Theory and supported other scientists with weekly research report.
- Implemented time and entropy-based feature functions in Python to detect PTSD from EEG data.
- Optimized existing C++ library for signal processing and achieve 5x faster execution results.

PROJECTS

Deep Neural Network trained with Filtering methods for Natural Language Processing

- Designed and Implemented DHIPF-RNN algorithm for sequential text classification.
- Improved the performance of RNN in stochastic data processing with implicit sampling methods.
- Utilized: Implicit Sampling, Homotopy Analysis Method, Python, RNN(LSTM, GRU), PyTorch

State Estimation using Sequential Monte Carlo methods

- Designed new filtering algorithm for hidden state estimation, tested on Double-Well Potential model and Lorenz Attractor and achieved better accuracy than traditional filtering methods.
- Improved the traditional nonlinear tracking algorithms by using homotopy method to enable the tracking of objects with sudden shift.
- Utilized: Kalman Filter, Particle Filters, MATLAB, Latex

Pattern Recognition using Variable Length Markov Chain Model

- Wrote 5,000+ lines of R code for the applications in detection of the author of literature, the pattern in stock movement and the signal before earthquake.
- Utilized: R, Git, Hypothesis Test, Bayesian Inference, Principle Component Analysis

PROGRAMMING SKILLS AND TOOLS

Python, R, MATLAB, C++, SQL, Spark, Git, RNN(LSTM, GRU), Regression Algorithms, SVM, PCA, Particle Filter, Ensemble Kalman Filter, Implicit Sampling, Markdown, HTML