

# Navid Bahadoran

Tallahassee, FL

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Visa Status: US Citizen

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## EDUCATION

**Florida State University**, Tallahassee, FL

Expected: May 2026

PhD in Applied Mathematics (Financial Mathematics Track), GPA (3.96/4)

- Research Focus: Random Matrix Theory (RMT) and its applications in Machine Learning, Deep Learning, and High-Dimensional Data Analysis

**University of Washington**, Seattle, WA

Dec 2021

MS in Applied Mathematics (Computational Finance and Risk Management Track), GPA (3.95/4)

**Sharif University of Technology**, Tehran, IRAN

Bachelor of Science in Electrical Engineering

## PHD THESIS & RESEARCH EXPERIENCE

- Developing novel RMT-based dimensionality reduction and feature selection techniques for complex data structures in ML.
- Investigating free probability theory and spectral analysis for improved covariance matrix estimation in finance and deep learning.
- Exploring the intersection of random matrices with quantum computing, particularly in quantum kernel methods for classification and hybrid quantum-classical optimization algorithms.
- Applications in large-scale data systems, cloud computing, and high-performance architectures, optimizing information retrieval and storage.

Spring 2025

**CFA Institute Research Challenge**, University of Washington, WA

*Research Analyst, Financial Modeling & Time Series Analysis*

Jan 2021

- Conducted valuation and trading analysis of Columbia Sportswear using advanced time series forecasting techniques in Python

## COURSEWORK AND PROFESSIONAL DEVELOPMENT

**Machine Learning, Monte Carlo Methods, Time Series Analysis, Stochastic Analysis, Quantum Computing**

- ◆ Quantum Computing & High-Dimensional Optimization
- Developed a quantum variational algorithm for the Max-Cut problem, implementing Hamiltonian simulation and hybrid quantum-classical variational methods.
- Constructed a Quantum Support Vector Machine (QSVM) leveraging quantum kernel estimation to enhance classical ML models.
- ◆ Machine Learning for Image Forensics
- Built an image tampering detection model using GLCM, HOG, LBP, LLE for feature extraction, Random Forest, XGBoost, SVM for classification, and PCA for dimensionality reduction.
- ◆ High-Dimensional Financial Modeling
- Mean-Variance Portfolio Optimization combined with James-Stein shrinkage estimators for improved covariance estimation in high-dimensional finance.
- Applied random matrix theory techniques to analyze eigenvector stability in financial risk assessment models.

Summer 2024

Fall 2024

Spring 2025

## MENTORING & TEACHING EXPERIENCE

**Florida State University (FSU)**, Tallahassee, FL

Aug 2023-Present

*Graduate Teaching Assistant & Research Mentor*

- Mentored undergraduate students on Python programming, machine learning, and statistical modeling techniques for research projects.
- Provided hands-on training in data analysis and AI model evaluation.
- Led recitations and office hours for undergraduate courses in Probability & Stochastic Analysis.

## WORK EXPERIENCE

**State of Wisconsin Investment Board (SWIB)**, Madison, WI

Nov 2021-Aug 2023

*Data Analyst, Risk Analytics and Systems*

- Developed Monte Carlo simulation models for ex-ante risk analysis using FactSet Factor Models in Python.
- Built a liquidity analytics database for enterprise-level risk management, integrating SQL and Python (SQLAlchemy).

**Massachusetts Pension Reserves Investment Management Board (Mass PRIM)**, Boston, MA

Jun 2021-Nov 2021

*Quantitative Research Intern, Research Department*

- Designed machine learning models to rank public companies based on likelihood of Private Equity-like returns, incorporating financial metrics, market trends, and NLP for earnings call analysis.

**T-Mobile, Seattle, WA**

*Telecom Engineer, RF Network Planning and Optimization*

Sep 2014-May 2018

- Performed RF modeling and simulation for cellular network planning, including propagation analysis and coverage optimization using industry-standard tools.
- Configured and optimized base station parameters (e.g., antenna tilt, power levels, neighbor lists) to improve coverage, capacity, and handover performance.
- Conducted drive test data analysis and KPIs evaluation to troubleshoot network performance and identify interference or capacity issues.
- Collaborated with cross-functional engineering teams to support network expansion and LTE rollout projects, including frequency planning and site commissioning.
- Documented network optimization strategies and prepared technical reports for internal stakeholders and regulatory compliance

## CERTIFICATIONS & PROFESSIONAL DEVELOPMENT

- Data Science Certificate, **Erdős Institute**
- Stochastic Quantization, **SLMS Summer School, University of California, Berkley, CA**

Dec 2024

July 2024

## MODELING AND TECHNICAL SKILLS

- Programming: Python (Pandas, NumPy, Scikit-learn, TensorFlow, PyTorch), R, SQL, C++ (basic)
- Machine Learning & AI: Supervised/Unsupervised Learning, Deep Learning, Quantum ML, Feature Selection, Bayesian Optimization
- Quantum Computing: Qiskit, PennyLane, Quantum Kernels, Variational Algorithms
- Financial & Risk Modeling: Stochastic Analysis, Portfolio Optimization, Monte Carlo Simulations
- Data Visualization & Cloud Computing: Power BI, Tableau, High-Performance Computing (HPC), AWS

## HONORS & AWARDS

- Academic Achievement & Peer Leadership Award, University of Washington (Fall 2021)
- Graduate Fellowship Nominee, Google PhD Fellowship Program (2025)

Fall 2021

Fall 2021

## INTEREST & ACTIVITIES

Tennis | Swimming | Traveling | Playing Santoor (Persian Musical Instrument)