Michael Wieck-Sosa

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EDUCATION

Carnegie Mellon University | PhD in Statistics | Advisor: Aaditya Ramdas *May 2027*

- GPA: 3.96/4.00 | Areas: nonstationary time series, forecasting, deep learning, conformal prediction, and causal discovery

University of Illinois at Urbana-Champaign | MS in Statistics *May 2022*

- GPA: 3.95/4.00 | Awards: 2-year teaching assistantship with full tuition waiver and stipend

Fordham University | BS in Mathematics with Minors in Computer Science and Economics *May 2020*

- GPA: 3.77/4.00 | Awards: *magna cum laude* | GRE: 170/170 Quantitative, 163/170 Verbal, 4.5/6.0 Writing

DOCTORAL RESEARCH

Adaptive Deep Learning for Forecasting Nonstationary Nonlinear Time Series | Wei Biao Wu *January 2025-Present*

- Developing theory and methods for estimating time-varying regression functions using deep neural networks

Simulation-Based Inference for Models of Complex Temporal Systems | Cosma Shalizi *March 2024-Present*

- Inferring parameters of analytically intractable models by matching summary statistics of simulated data and observed data
- Creating a computationally efficient method that can be used with models of nonstationary nonlinear time series

Identifying Auxiliary Indicators in Unstable Forecasting Environments | Aaditya Ramdas and Michel Haddad *Jan. 2023-Present*

- Developed a framework for detecting new forecasting signals that can be used with nonstationary nonlinear time series

INTERNSHIPS AND RESEARCH ASSISTANTSHIPS

J.P. Morgan | Quantitative Research | Markets Summer Associate | Received Return Offer *June 2023-Aug. 2023*

- Worked with macro traders and quants on a method for hedging derivatives portfolios via multi-period optimization
- Collaborated with energy derivatives traders on improving the statistical methods used in a systematic trading strategy

J.P. Morgan | Quantitative Research | Markets Summer Associate | Received Return Offer *June 2022-Aug. 2022*

- Developed a method for adaptively selecting the parameters of a trade execution algorithm based on real-time market data

MIT Lincoln Lab | Interceptor and Sensor Technology Group | Summer Research Intern *May 2021-July 2021*

- Implemented signal processing methods for tracking objects in outer space and ran simulations to evaluate different methods

University of Illinois at Urbana-Champaign | Computer Science Department | Graduate Research Assistant *Jan. 2021-May 2021*

- Discovered patterns in the cross-platform dynamics of posts on Twitter, Facebook, and Reddit using Hawkes processes

National Center for Supercomputing Applications | Great Lakes to Gulf | Graduate Research Assistant *Sept. 2020-May 2022*

- Built confidence bands for trends in concentrations and fluxes of chemicals to measure water quality changes across the US

COURSEWORK

- **Statistics:** Machine Learning, Time Series, Regression Analysis, Statistical Theory, Statistical Computing
- **Computer Science:** Algorithms, Data Structures, Operating Systems, Computer Architecture, Artificial Intelligence
- **Math:** Stochastic Calculus, Measure-Theoretic Probability, Numerical Analysis, Functional Analysis, Measure Theory, Interacting Particle Systems, Geometric Flows, Lie Groupoids and Algebroids, Abstract Algebra, Topology, Real Analysis

TEACHING ASSISTANT POSITIONS

- Option Pricing, Financial Time Series, Financial Data Science, MSCF ML Capstone Project, Advanced Data Analysis

PROGRAMMING LANGUAGES AND SOFTWARE

- Python expert (numpy, pandas, scikit-learn, PyTorch, TensorFlow), R expert (tidyverse, Rcpp), proficient in SQL, q/kdb+

POSTERS AND TALKS

- 2024: presented a poster at the NBER-NSF Time Series Conference at UPenn, and gave a talk at the StatML Group at CMU