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: forecasting nonstationary time series, causal discovery, variable selection, and deep learning

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

Statistical Inference for Models of Complex Systems through Random Features | Cosma Shalizi *March 2024-Present*
- Inferring parameters of analytically intractable models by matching summary statistics of simulated data and observed data
- Proving that *2d+1* random Fourier features of a high-dimensional process are sufficient to infer a *d*-dimensional parameter

Conditional Independence Testing for Nonstationary Time Series | Aaditya Ramdas | GitHub *Jan. 2023-Present*
- Developed a test for detecting conditional dependencies in nonstationary time series via time-varying nonlinear regression

INTERNSHIPS AND RESEARCH ASSISTANTSHIPS

J.P. Morgan | Quantitative Research | Markets Summer Associate | Received Return Offer *June 2023-Aug. 2023*
- Worked with macro index traders to develop a multi-period hedging optimization method for derivatives portfolios
- Collaborated with energy derivatives traders to improve 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 conditional optimization method for the parameters of a trade execution algorithm using real-time tick 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 AND SOFTWARE

- Deep expertise in Python, R, SQL, and proficient in C++, q/kdb+
- Extensive experience with NumPy, Pandas, Scikit-learn, PyTorch, TensorFlow, Tidyverse, Rcpp, AWS EC2, Slurm, Linux

POSTERS

- Conditional Independence Testing for Nonstationary Time Series: 2024 NBER-NSF Time Series Conference at UPenn