Michael Wieck-Sosa

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Education

Carnegie Mellon University | PhD in Statistics | Advisor: Aaditya Ramdas *Sept. 2022-Present*

- GPA: 3.98/4.00 | Awards: DeGroot-Goel Fellowship (2026), awarded by faculty to one CMU Statistics PhD student per year
- Thesis topics: prediction with transformers, estimation of dynamic models, and inference for structure in time series data

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

- GPA: 3.95/4.00 | Awards: two years of guaranteed assistantships 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

Programming Languages and Tools

- Python expert: extensive experience with NumPy, pandas, Polars, scikit-learn, statsmodels, and PyTorch
- R expert: extensive experience with dplyr, Rcpp, xts, zoo, caret, mgcv, glmnet, parallel, and ggplot2
- SQL, Git, Bash expert: extensive experience with data management, version control, and Linux
- C++ proficient: used for courses in Data Structures and Algorithms
- q/kdb+ proficient: used for managing high-frequency tick data

Coursework

- **Statistics**: Advanced Statistical Theory, Intermediate Statistics, Mathematical Statistics, Advanced Time Series Analysis, Regression Analysis, Computational Statistics
- **Computer Science**: Algorithms, Data Structures, Theory of Computation, Operating Systems, Computer Architecture, Artificial Intelligence, Machine Learning, Data Mining for Listening to the Social Universe
- **Math**: Stochastic Calculus, Measure-theoretic Probability, Functional Analysis, Measure Theory, Interacting Particle Systems, Geometric Flows, Differential Geometry, Lie Groupoids & Lie Algebroids, Topology, Abstract Algebra, Numerical Analysis, Numerical Linear Algebra, Real Analysis, Differential Equations, Linear Algebra, Mathematical Modeling

Research Assistantships and Internships

Carnegie Mellon University | NSF Grant | PI: Cosma Shalizi *May 2024-Present*

- Developing theory, methods, and software in Python and R for estimating and inferring the parameters of dynamic models
- Using optimization algorithms to optimize highly non-convex objective functions to fit complicated models for time series
- Applied methods to time series models, state-space models, SDEs, ODEs, and dynamical systems with observational noise

MIT Lincoln Lab | Group 38 *May 2021-July 2021*

- Implemented optical tracking methods for tracking objects in outer space and ran simulations to compare approaches

University of Illinois at Urbana-Champaign | FORWARD Data Lab | Computer Science Department *Jan. 2021-May 2021*

- Discovered patterns in cross-platform dynamics on Twitter, Facebook, and Reddit with Hawkes processes using Python

National Center for Supercomputing Applications | Innovative Software and Data Analysis Group *Sept. 2020-May 2022*

- Built confidence bands for trends in concentrations and fluxes of chemicals to measure changes in water quality over time
- Used parallel computing to construct these confidence bands for 1000+ locations in the U.S. and made visualizations using R

Teaching Assistantships

- Courses in the MS in Computational Finance program at CMU: Simulation Methods for Option Pricing, Financial Time Series, Financial Data Science I and II, and the Machine Learning Capstone Project (x2)
- Courses in the MS in Data Science program at CMU: Time Series and Experimental Design
- Courses in the BS in Statistics and Statistics/Machine Learning programs at CMU: Advanced Data Analysis

Last Updated May 2026