Jacob Mazor, PhD

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LinkedIn | GitHub | Website

SUMMARY

Mathematician with a PhD in holomorphic dynamics and hyperbolic geometry, combining rigorous theoretical expertise with computational research skills in Python and Julia. Experienced in dynamical systems modeling, numerical methods, and scientific computing. Seeking industry R&D roles applying mathematical reasoning to complex real-world problems.

TECHNICAL SKILLS

Programming	Python (NumPy, SciPy, Pandas, Polars), Julia (SciML, DynamicalSystems.jl); Lean, CUDA (beginner)
Math Methods	Linear algebra, stochastic calculus, information theory, dynamical systems, optimization
ML (Self-Study)	scikit-learn, PyTorch, TensorFlow, JuliaML
Languages	English (native), French (mathematical literature), Hebrew (conversational)

EXPERIENCE

AI Trainer (Contract) | Handshake AI   Sep 2025 – Present
- Train and evaluate LLMs on mathematical reasoning; author problems, solutions, and proofs for RLHF data pipelines

Postdoctoral Researcher | TIFR, Mumbai   Sep 2024 – Jul 2025
- Continued research on Schwarz reflection maps; produced preprint submitted to Annales de la Faculté des Sciences de Toulouse

Graduate Research & Teaching Assistant | Stony Brook University   Sep 2018 – Aug 2024
- Conducted original research in holomorphic dynamics under Mikhail Lyubich, research published in Communications of the AMS
- Taught 500+ students across precalculus through analysis; designed and taught Complex Analysis for Teachers course

EDUCATION

PhD in Mathematics | Stony Brook University   Sep 2018 – Aug 2024
  Advisor: Mikhail Lyubich | Specialization: Holomorphic dynamics, hyperbolic geometry
  Thesis: One parameter families of Schwarz reflection maps arising from Shabat-Belyi maps

B.S. Mathematics with Honors | University of Chicago   Sep 2014 – Jun 2018

PROJECTS

EvolvingNetwork [GitHub] — Julia library for analyzing connectivity and spectral properties of random-walk networks on spherical surfaces. Planned: GPU acceleration, ML-based control.

Schwarz Reflection Julia Set Grapher — Julia library implementing custom numerical methods for graphing Julia sets and parameter spaces of Schwarz reflection maps (private/experimental).

PUBLICATIONS

Antiholomorphic correspondences and mating I: realization theorems (joint with M. Lyubich and S. Mukherjee). Communications of the AMS, 2024. [Paper]
- Resolved a 20 year old conjecture on the realization of polynomial dynamics by anti-holomorphic correspondences

Antiholomorphic correspondences and mating II: Shabat polynomial slices (joint with M. Lyubich and S. Mukherjee). Preprint, 2025. Submitted to Annales de la Faculté des Sciences de Toulouse. [arXiv]

SELECTED TALKS

- *When zippers virtually fiber* — Stony Brook, May 2025
- *Mating Kleinian groups and (anti-)rational maps via Schwarz reflections and correspondences* — Dartmouth, CUNY, Boston University, Apr 2025
- *Maps from trees* — KSoM Workshop on Dynamics, Dec 2024
- *"Geodesic flows" for iterated rational maps* — TIFR Random Geometry Seminar, Sep 2024
- *Combining rational maps and Kleinian reflection groups* — Midwest Dynamical Systems Conference, UIC, Oct 2023