Jonah Smith

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Education

University of Kentucky   **August 2023 — May 2025 (expected)**
M.S. in Statistics   *Lexington, KY, US*
- Concentration in Biological Statistics

Florida State University   **August 2019 — May 2023**
B.S. in Applied and Computational Mathematics with Honors in the Major   *Tallahassee, FL, US*
- Minor in Music
- Honors Scholar, Magna Cum Laude
- Thesis: *Flour Power: Modeling the Growth and Decay of Sourdough Starters*

Experience

Graduate Teaching Assistant   **August 2023 — Present**
University of Kentucky   *Lexington, KY, US*
- Communicates statistical and mathematical concepts to students in weekly lectures, labs, and tutoring sessions
- Responds to communications from students and instructors to facilitate learning and clarify course expectations
- Develops curriculum and teaches for 400+ students in a statistics course focused on applications to the sciences

Research Intern   **June 2024 — August 2024**
Zuse Insitute Berlin at Freie Universitaet Berlin   *Berlin, DE*
- Created fluid simulations to model turbulent flow around multi-turbine wind farms via solving Navier-Stokes equations
- Collaborated with researchers from renewables projects to optimize energy output and improve turbine design
- Participated in meetings and presentations to communicate findings to stakeholders and leading researchers

Data Analyst Intern   **August 2021 — May 2022**
Florida State University Libraries   *Tallahassee, FL, US*
- Created R model to clean, organize, and create visualizations for occupancy data
- Improved accuracy for an algorithm to match swipe pairs between 12 turnstiles and 50,000+ student/staff records
- Collaborated with senior assessment librarians to cater to library data reporting needs
- Assisted researchers with data management and cleaning for ad-hoc projects concerning library accessibility

Actuarial Intern   **May 2021 — August 2021**
Aetna, a CVS Health Company   *Virtual from Atlanta, GA, US*
- Developed a dynamic Excel tool to compare 500+ records of forecasting and pricing data
- Used SQL and Excel to organize, query, and analyze over 250 complex healthcare pricing factors
- Assisted actuarial staff with a reconciliation project comparing proprietary modeling programs

Projects

Wind Farm Layout Optimizer (W-FLOP) | *FreeFem++, ANSYS, LaTeX*   **June 2024 — August 2024**
- Models airflow in FreeFEM++ to predict vortex and wake behavior behind single- and multi-turbine wind farm designs
- Incorporates physical considerations for fluid flow and Kelvin Helmholtz instability via Navier-Stokes equations
- Includes parameter control for inlet velocity, turbine blade angle, rotor diameter, and number of blades to optimize energy output

Undergraduate Honors Thesis | *Python, matplotlib, LaTeX*   **May 2022 — April 2023**
- Models intra- and multi-generational growth of sourdough cultures with ordinary differential and difference equations
- Incorporates Monod, Gompertz, and Michaelis-Menten models of molecular kinetics and nutrient partitioning
- Presents a framework through which researchers can optimize organism concentration as a function of growth parameters

Campus & Community Involvement

Senator   **October 2024 — Present**
University of Kentucky Student Government Association   *Lexington, KY, USA*

Secretary   **May 2024 — Present**
University of Kentucky Dr. Bing Zhang Department of Statistics *Lexington, KY, US*

Chapter Secretary   **May 2024 — Present**
University of Kentucky Spectra   *Lexington, KY, US*

Student Mentor   **March 2024**
University of Kentucky AI/ML Research Symposium   *Lexington, KY, US*

Conferences & Workshops Attended

Theory, Methods, and Applications of Quantitative Phylogenomics   **October 2024**
The Institute for Computational and Experimental Research in Mathematics   *Providence, RI, US*

University of Kentucky AI/ML Research Symposium   **March 2024**
University of Kentucky   *Lexington, KY, US*

ASI in Mathematics of Data Science and Machine Learning   **January 2024**
USA-Uzbekistan Collaboration for Research, Education and Student Training   *Urgench State University, Urgench, UZ*

Python for R Users Short Course   **October 2023**
American Statistical Association - Kentucky Chapter   *Louisville, KY, US*

Miscellaneous Awards & Honors

University of Kentucky Professional Development Grant	2024
Third Place, University of Kentucky Data Science Competition	2024
NSF Research Grant — Advanced Studies Institute in Mathematics of Data Science and Machine Learning	2023
University of Kentucky Graduate Teaching Assistantship	2023
SRCOS Conference Attendance Grant — Statistics Undergraduate Research Experience	2022

Relevant Coursework

- Actuarial Modeling
- Applied Linear Algebra
- Biological Modeling
- Computational Inference
- Differential Equations
- Machine Learning
- Mathematical Modeling
- Mathematical Statistics
- Numerical Analysis
- Quantitative Plant Genomics
- Real Analysis
- Statistical Inference
- Statistical Methods
- Stochastic Modeling
- Survival Analysis
- Theory of Probability

Courses Taught

(Final enrollment numbers given in parentheses)

STA 296: Statistical Methods and Motivations   **3.0 Credits**
Fall 2023 (122), Spring 2024 (74), Fall 2024* (32)   *University of Kentucky*

STA 210: Making Sense of Uncertainty: An Introduction to Statistical Reasoning   **3.0 Credits**
Spring 2025* (76)   *University of Kentucky*

*Primary Instructor

Skills

Tools: Jupyter, Microsoft SQL Server Manager, Overleaf, Pycharm, RStudio, Spyder, Unix, Vim, VS Code
Computing: Csound, C++, FreeFEM++, HTML, LaTeX, MATLAB, Python, R, SQL
Language: EN (Native), ES (Fluent), UA (Intermediate), RU (Intermediate), DE (Intermediate)