Aidan Hurwitz

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Skills & Interests

Languages: Python, R, C++, SQL, JavaScript, HTML, CSS, LaTeX.
Technologies: Tidyverse, Numpy, Pandas, Jupyter, RStudio, MongoDB, Flask (web dev), Keras, sci-kit learn, Matplotlib, Tensorflow.

- Passion for *learning* and *teaching* pure and applied Mathematics, specifically linear algebra, statistics theory, and data visualization.
- All things outdoors- hiking, camping, kayaking, mountain biking. Favorite National Park: The Great Smokey Mountains.
- Music, specifically *folk indie* but dabbles in everything. Plays guitar, violin, and piano regularly (see my website)!

Education

B.S. **University of Florida**, *Mathematics & Data Science double major* — Gainesville, FL
August 2023 – May 2027 (prosp.)

- GPA: **4.0/4.0**, minor in Environmental Science.
- **Favorite Coursework:** Linear Algebra (theory and for data science), Probability, Real Analysis & Advanced Calc., Regression Analysis, Environmental Science, Programming in R, Agricultural Ecology, Data Structures.
- **Study Abroad** (Summer 2025): UF in England - Statistics and Data Science research program working with Rothamsted Research Institute to perform **agricultural data science** methods and study take-all disease build-up in multiple long term wheat trials.
- Officer [2024-2025] and member of Honors Tabletop, the board game club for nerds!

Research & Experience

UF Smathers Library, *Geospatial Research Intern* — Gainesville, FL
August 2026 – Present

- Collaborated with geospatial librarians Dr. Javiera Rudolph and Joe Aufmuth to create extensive **documentation** of R, Python, and ArcGIS **geospatial analysis** workflows.
- Created interactive code examples and tutorials using **Quarto**, and published these to the UF Smathers library catalog.
- Explored resources and **robustness** of **extreme value analysis** methods in geospatial applications such as long-distance migration in birds or extreme weather events.

UF University Scholars Program, *Primary Investigator* — Gainesville, FL
May 2026 – Present

- Explored symbolic music processing methods and their application in folk song comparisons.
- Worked alongside professors in the Department of **Statistics** and the Department of **Music** to connect advanced computational ideas with real-world musicology problems.
- Adapted **n-gram analysis** to symbolic music, developed rhythm and melody similarity metrics, and examined **data equity** while comparing performance by **cross validation**.
- Preparing paper for submission and poster to be presented at the UF Undergraduate Research Symposium (Spring 2026).

Yale School of Public Health (BDSY), *NIH-Funded Researcher* — New Haven, CT
Summer 2026

- Studied Acute Kidney Disease using **advanced bayesian statistical models** for clinical trials.
- Advised under Dr. Bhramar Mukherjee and Dr. Fan Li to study statistics, bioinformatics, public health, and data science while also presenting original research findings.
- Collaborated with faculty and students to explore time-varying affects for alert systems in hospitals using the **causal inference** framework and implemented bayesian additive regression trees to estimate conditional average treatment effects and discover **subgroup heterogeneity**.
- Prepared oral presentation and poster board to be given at a Yale research symposium.

UF Department of Geomatics, *Research Assistant* — Gainesville, FL
August 2025 – June 2026

- Worked under Dr. Ben Wilkinson and PhD students conducting research in computer vision, image registration, photogrammetry, and soil sciences.
- Produced **deliverables** to non-profits involved in coastal research on Florida Gulf.
- Wrote a custom algorithm to perform a space resection given n object points in $\mathbb{R}^3$ and n camera points in $\mathbb{R}^2$ using the Direct Linear Transform method and **iterative gradient descent**.
- Designed a **randomized controlled trial** to determine optimal tuning parameters for stereoscopic cameras in the context of point-cloud generation.

UF College of Education, *Research Partner* — Gainesville, FL
January 2025 – May 2025

- Worked with Dr. Kent Crippen at the UF College of Education building lesson plans for high school chemistry and biology classes using 3d molecular modeling software.
- Implemented **constructivist** philosophy and **data-driven science** to guide students into discovery and scientific learning.

UF CLAS Academic Resources, *Mathematics Tutor* — Gainesville, FL
August 2024 – Present

- Prepared over **2000** UF students for success in their mathematics and statistics studies.
- Served as a mentor, tutor, study skills advisor, and crisis counselor for students.
- Led exam reviews, ran math tutoring labs, and held private appointments during both fall and spring semesters, from Statistics 1 and Trigonometry to Elementary Differential Equations.

Chalkline Baseball, *Founder and Developer* — Sarasota, FL (remote)
August 2023 – Present

- Founded, build web-app to help local Little League schedule games and umpires.
- Integrated Chalkline Baseball in 2 different leagues in the Sarasota area, providing services to over **100** umpires, **200** coaches, and **3000** players.
- Created a service to manage umpire schedules, send email reminders, log payments, notify staff, and serve the community.
- Reduced no-shows from volunteer workers by over **200%** using automated emails.

Publications & Presentations

Finke, G., Fisher S., & Hurwitz, A. "Exploring Causal Methods to Assess Time-Sensitive Effects and Hospital Heterogeneity for Acute Kidney Injury Alerts." *Oral, Poster Presentation, Yale Big Data Summer Symposium, July 2026.* — July 2026

Hurwitz, A. & Johnson, B. "Tracking n-gram melodies across centuries in symbolic European folk music." *Paper in preparation. Poster to be presented at UF Undergraduate Research Symposium.* — In preparation for Spring 2027