NOAH M. SWAN

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EDUCATION & SKILLS

University of Chicago, Chicago, IL — Expected March 2027
Master of Science in Statistics

Villanova University, Villanova, PA — May 2023
Bachelor of Science in Mathematics, Minors in Economics, Statistics and French, Honors PPE Concentration
Graduated Summa Cum Laude, Phi Beta Kappa Honor Society

WORK EXPERIENCE

NERA Economic Consulting | Washington DC — July 2023-May 2025
Associate Analyst

- Drove efforts to comply with governmental data requests for multiple billion-dollar mergers, coordinating data review with researchers to provide accurate submissions to DOJ/FTC that supported regulatory approval
- Leveraged arrow and data.table packages in R to conduct analyses on datasets up to 1.5 TB, reducing computational time by 5-20x and cutting memory usage by 50-70%
- Developed S3 method for internal R package to streamline charting with ggplot2; improved reproducibility through standardized charts and reduced build time on deliverables by 35%
- Generated 50+ service area maps using ArcMap and Python (ArcPy), highlighting geographic overlaps between merging parties to inform antitrust risk assessment and anticipate DOJ arguments
- Charted receipt data and transactional sales data to identify customer overlaps and possible event studies, guiding analyses of product substitutability ahead of regulatory scrutiny

Orlando City SC | Remote — Fall 2022
Soccer Analytics Intern

- Engineered a ball-progression metric to evaluate team possession play from event data using R, strengthening how the team assessed buildup effectiveness
- Designed framework to isolate game-state bias on player and team statistics, strengthening the ability to evaluate opponents and possible transfer targets

Oklahoma City Energy FC | Remote — 2021-2022
Lead Data Analyst

- Developed ETL pipeline to receive data from Wyscout API and designed Shiny dashboard suite to track team's KPIs and support coaching strategies ahead of a top 5 league finish
- Implemented recruitment dashboard integrating custom filters to track and compare player performance metrics across 3 leagues, improving coaching staff's ability to identify, evaluate, and compare transfer targets

SELECTED PROJECTS

Marginal Effect of XGBoost Hyperparameter Tuning (XGBoost, hyperopt, polars)

- Ran XGBoost tuning experiments across search-space regimes; built a modular codebase for prediction tasks
- Found that shorter tuning runs across focused search spaces achieved comparable performance with time savings of ~37%

Simulating Tennis Matches for Outcome Prediction (PyTorch, XGBoost, Scikit-learn, SciPy, pandas, Matplotlib)

- Built a post-match win-probability model and simulated match paths from player-level statistic distributions to forecast outcomes, achieving 8% better accuracy over a naïve rank-based prediction strategy
- Parameterized player-level distributions using maximum likelihood estimation with truncated normal distribution to simulate match results for prediction algorithm

TECHNICAL SKILLS AND INTERESTS

Programming Languages: Python, R, C++, SQL
Software and Tools: pandas, polars, XGBoost, PyTorch, Scikit-learn, NumPy, SciPy, Matplotlib, tidyverse, data.table, Arrow, ggplot2, shiny, Git, ArcPy/ArcMap
Additional Interests: Surrealist Books, Soccer, Tennis, College Football, NBA, Sports Analytics, Art History, French