pnxenopoulos@gmail.com

Peter Xenopoulos

502.445.6688

peterxeno.com

Experience

Research Scientist, NVIDIA

January 2023 - Present

Working at the intersection of artificial intelligence and video games.

Head of Quantitative Research, Novig

January 2023 - Present

Led engineering and research efforts to provide scalable and accurate sports simulations at sub-second latency to price NFL, MLB, NBA, and NCAA markets. Delivered robust, cloud-based streaming and model deployment solutions that simultaneously power tens of thousands of betting markets.

Data Scientist, Product Analytics, Facebook

May 2021 - August 2021 (Internship)

Analyzed speech recognition models and user field test data for an augmented reality product. The analysis revealed structural fairness concerns for critical demographics and product usage environments.

Data Scientist, Big League Advantage

May 2019 - August 2019 (Internship)

Created and deployed an end-to-end college football prediction system (preprocessing, modeling, deployment) for main markets in under 3 months, which guided profitable bets. Continued as a consultant to work on baseball player valuation.

Education

Ph.D., Computer Science, New York University

August 2018 - December 2022, Advised by Claudio Silva, Thesis: Data Mining for Esports

Awards: Pearl Brownstein Doctoral Research Award, Deborah Rosenthal, M.D. Outstanding Quals Performance Award

B.A., Mathematics & Economics (Double Major), Pomona College

August 2014 - May 2018

Awards: Distinction in Mathematics Thesis

Projects

For a list of published academic works, visit peterxeno.com or see below.

Awpy | awpycs.com, 300+ Github Stars & 17,000+ installs

I created the Awpy library in Python, which is used to parse, analyze, and visualize Counter-Strike game replay files. Hundreds, including professional esports teams, use it regularly. I also manage a small team of developers that maintains Awpy.

ESTA | github.com/pnxenopoulos/esta

I created the Esports Trajectories and Actions (ESTA) open-source dataset that provides rich player position and event data for over 1,500 professional Counter-Strike game replays.

Skills

Programming: Python, Rust, JavaScript, R, SQL, Git, Github Actions, CI/CD, Docker, AWS/GCP
Technical: Graph/Convolutional neural networks, CNNs, Machine learning interpretability, Tree-based methods

Selected Publications

For a full list, please visit

peterxeno.com

Conference

- **Xenopoulos, P.**, Rulff, J., Nonato, L. G., Barr, B., & Silva, C. (2022). *Calibrate: Interactive Analysis of Probabilistic Model Output*. IEEE Transactions on Visualization and Computer Graphics, 29(1), 853-863.
- **Xenopoulos, P.**, Freeman, W. R., & Silva, C. (2022, April). *Analyzing the Differences between Professional and Amateur Esports through Win Probability*. In Proceedings of the ACM Web Conference 2022 (pp. 3418-3427).
- **Xenopoulos, P.**, & Silva, C. (2021, December). *Graph Neural Networks to Predict Sports Outcomes*. In 2021 IEEE International Conference on Big Data (Big Data) (pp. 1757-1763). IEEE.
- **Xenopoulos, P.**, Doraiswamy, H., & Silva, C. (2020, December). *Valuing Player Actions in Counter-Strike: Global Offensive*. In 2020 IEEE international conference on big data (big data) (pp. 1283-1292). IEEE.

Journal

- **Xenopoulos, P.**, Rulff, J., & Silva, C. (2022). *ggViz: Accelerating Large-Scale Esports Game Analysis*. Proceedings of the ACM on Human-Computer Interaction, 6(CHI PLAY), 1-22.

Workshop

- **[Keynote] Xenopoulos, P.**, Chan, G., Doraiswamy, H., Nonato, L. G., Barr, B., & Silva, C. (2022, November). *GALE: Globally Assessing Local Explanations*. In Topological, Algebraic and Geometric Learning Workshops 2022 (pp. 322-331). PMLR.
- **Xenopoulos, P.**, Coelho, B. & Silva, C. (2022, November). *Optimal Team Economic Decisions in Counter-Strike*. In AI for Sports Analytics Workshop 2021. IJCAI.
- Petri, G., Stanley, M., Hon, A., Dong, A., **Xenopoulos, P.**, & Silva, C. (2022, November). *Bandit Modeling of Map Selection in Counter-Strike: Global Offensive*. In AI for Sports Analytics Workshop 2021. IJCAI.

Preprint

- Hogan-Hennessy, S., **Xenopoulos, P.**, & Silva, C. (2022, October). *Market Interventions in a Large Scale Virtual Economy*.
- **Xenopoulos, P.**, & Silva, C. (2022, April). *ESTA: An Esports Trajectory and Action Dataset*.