Pau Pereira, Ph.D.

Data/Applied Scientist · Economist

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Economist and data scientist with 9+ years of industry experience developing production ML and economic modeling systems. Expertise in causal inference, structural econometrics, and Bayesian methods applied to pricing and platform economics.

Skills

- **Methods**: Structural estimation, Bayesian inference, causal inference, discrete choice & demand modeling, experimentation & surrogate models, multi-armed bandits.
- **Applications**: Pricing & promotions, elasticity & WTP estimation, dynamic pricing, revenue optimization, policy evaluation.
- **Stack**: Python, R, SQL, JAX, NumPyro/PyMC, PyTorch, Spark, AWS/SageMaker, scikit-learn, Git.

Experience

COLUMBIA–DREAM SPORTS AI INNOVATION CENTER *New York, USA*

Senior Principal Economist *2025*

- Founded and led the *Economic Modeling Team* at Dream11, the world's largest daily fantasy sports (DFS) platform with 250M+ users. Developed a system-level structural model of platform liquidity dynamics, enabling counterfactual analysis of pricing, contest design, and assortment decisions, surfacing novel platform health metrics (Spin Ratio, cross-segment spillover flows) previously absent from leadership tracking, and establishing the research roadmap for the team.
- Led causal inference and experimentation on platform levers: designed A/B experiments, exploited historical natural experiments, and built surrogate models to translate short-term test results into long-term impact estimates.

AMAZON *Seattle/Bellevue, WA, USA*

Senior Economist / Economist, Pricing Research Team *2017–2024*

- Led development and deployment of Amazon's primary price elasticity modeling platform, covering hundreds of millions of products worldwide and serving 200+ internal teams. Used a large-scale hierarchical Bayesian model.
- Built large-scale discrete choice models to estimate customer-level willingness-to-pay for shipping speed.
- Built and deployed models spanning promotions, bundles, quantity discounts, and dynamic pricing.

Senior Economist, Supply Chain Optimization Team *2024–2025*

- Modeled large-scale product substitution to support assortment optimization.

Education

University of Pennsylvania Philadelphia, PA, USA
Ph.D. in Economics *2011 — 2017*

- Specialization: Empirical Industrial Organization

Barcelona School of Economics Barcelona, Spain
Master in Economics *2009 — 2011*

Universitat Pompeu Fabra Barcelona, Spain
B.Sc. in Economics *2005 — 2009*

Honors and Awards

- 2017 — **Winner, National Institute of Justice Real-Time Crime Forecasting Challenge** ($135K award).
- 2010 — **La Caixa Fellowship.** Spain's most competitive fellowship for graduate studies abroad.
- 2009 — **Prize to Top 10 GPAs in Economics (top 5%),** Universitat Pompeu Fabra.

Publications, Conference Talks, and Lectures

- 2019 — Flaxman, S., Chirico, M., Pau Pereira, and Loeffler, C. "**Scalable high-resolution forecasting of sparse spatiotemporal events with kernel methods: A winning solution to the NIJ 'Real-Time Crime Forecasting Challenge'.**" *The Annals of Applied Statistics* 13, no. 4 (2019): 2564–2585.
- 2022 — INFORMS Annual Meeting, technical talk; earlier selected for oral presentation at Amazon Consumer Science Summit. "**Probabilistic Models for Price Elasticity Estimation at Scale**".
- 2023 — INFORMS Annual Meeting, technical talk; earlier selected for oral presentation at Amazon Consumer Science Summit. "**Estimating the Distribution of Customers' Willingness-to-Pay for Faster Shipping Speed**".
- 2023 — INFORMS Annual Meeting, technical talk (coauthor, presented by Hyungjun Lee). "**Bounded Demand Extrapolation – Beyond the Constant Elasticity Assumption**".
- 2024 — Guest lecturer, Master in Operations Management, University of Saint Louis. **Pricing and price elasticity estimation**.
- 2024 — Guest lecturer, Master in Information Systems, University of Washington. **Causal Inference for Decision Making**.
- 2026 — Speaker at NABE TEC NYC. "**A Structural Model of a Daily Fantasy Sports Platform – The Role of Economic Theory in Tech**".