Pietro Carlotti

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Education

Ph.D. in Statistics *Aug 2024 – May 2029 (Expected)*
University of Texas at Austin *Austin, TX*
- Passed coursework and qualifying examinations with a 4.0 GPA

M.S. in Economics *Sep 2022 – Jul 2024*
Bocconi University *Milan, Italy*
- Graduated *cum laude* with a 4.0 equivalent GPA
- Dissertation: Financial Time Series Clustering via Bayesian Nonparametric Infinite HMM

B.S. & Honors Diploma in Economics *Oct 2019 – Mar 2022*
University of Pisa & Sant'Anna School of Advanced Studies *Pisa, Italy*
- Graduated *cum laude* one semester early with a 4.0 equivalent GPA

Publications

- **Density-Informed Pseudo-Counts for Calibrated Evidential Deep Learning.** Carlotti, Gligić, and Farahi. *To appear in Proceedings of Machine Learning Research, Vol. 335 (STAI-X 2026).* Preprint: arXiv:2602.01477.
- **Product Monte Carlo: Expectation Under a Product of Densities.** Carlotti, Liu, and Yao. *Under review.* Preprint: arXiv:2610.12702.
- **A Bayesian Critique of a Rank-Based Method for Surrogate Marker Evaluation.** Carlotti and Parast. *Under review at Pharmaceutical Statistics.* Preprint: arXiv:2603.14381.

Research & Professional Experience

Research Assistant — Product Monte Carlo *Jan 2026 – Present*
University of Texas at Austin *Austin, TX*
- Developed **PMC**, a method that aggregates analyses run independently on different sites, enabling scalable distributed, federated, and privacy-preserving inference, and derived theoretical guarantees.
- Implemented PMC in **PyTorch** as an open-source package, achieving an **89%** runtime reduction over the standard approach on a large real-world dataset with negligible error, and applied it to a protein imaging task.

Statistical Scientist *Jun 2026 – Aug 2026*
Berry Consultants *Austin, TX*
- Contributed to developing statistical designs across **4** clinical trials using adaptive methods such as promising zone, group sequential, and Goldilocks designs to improve operating characteristics and increase trial flexibility.
- Engineered an end-to-end statistical analysis pipeline for an interim trial evaluation, and conducted an independent literature review, authoring an internal report that successfully addressed key research questions.

Research Assistant — Evidential Deep Learning *Aug 2025 – Aug 2026*
University of Texas at Austin *Austin, TX*
- Interpreted EDL statistically, revealing that this AI/ML framework yields unreliable uncertainty quantification, and developed **DIP-EDL**, a novel parametrization with theoretical guarantees on asymptotic concentration.
- Implemented DIP-EDL in **PyTorch** and evaluated it against seven baselines across benchmark vision datasets and a real astronomy dataset, improving out-of-distribution detection AUROC from EDL's **75%** to a state-of-the-art **97%**.

Research Analyst Intern *Jan 2022 – May 2022*
Italian Ministry of Economy and Finance *Rome, Italy*
- Analyzed an extensive e-invoicing dataset, developing statistical models and visualizations to assess sector-level economic activity and tax compliance patterns, and contributed findings to a major departmental report.

Awards & Fellowships

- Paper Award, STAI-X 2026 (travel funding | $600 value | 9 recipients)
- "Giorgio Mortara" Scholarship, Bank of Italy (tuition and stipend | $83,000 value | 2 recipients nationwide)
- "Ermenegildo Zegna" Scholarship, Fondazione Zegna (grant | $10,000 value | 75 recipients nationwide)
- Graduate Merit Award, Bocconi University (tuition | $36,000 value | reserved for top applicants)
- Honors Scholarship, Sant'Anna (tuition, lodging, enrichment opportunities | $41,000 value | ∼50 recipients nationwide)

Technical Skills

Programming and Tools: Python, PyTorch, R, Git, CRAN, SQL, Lean, Stata, LaTeX
Methods: Frequentist and Bayesian Inference, Deep Learning, Uncertainty Quantification, Causal Inference, AI/ML