Petar Todorović, Ph.D.

Applied AI Lead | Forward Deployed Engineer

New York, NY | petartodorovic.com | LinkedIn | GitHub | Google Scholar

5,000+ citations | 25+ research publications | 1 patent

PROFESSIONAL EXPERIENCE

Palantir Technologies Jul. 2022–Present

Forward Deployed Engineer / Deployment Strategist *New York, NY*

- Architected an autonomous React/Python framework for code generation, execution, and insight discovery, using vector similarity and PageRank across 100+ domain-knowledge nodes; scaled to 30 deployments and 300+ users.
- Led delivery of an end-to-end machine-learning workflow and partnered with Product to shape Palantir's Model Studio for low-/no-code model development, translating customer requirements into roadmap priorities.
- Led the roadmap, implementation, and commercial expansion for a team in a leading international electric motorsport series; built autonomous Python/React workflows that analyzed several GB of telemetry per session across hundreds to thousands of signals and reduced between-session analysis from hours to minutes.
- Drove the technical conversion of a supply-chain pilot into a multi-million-dollar, two-year enterprise agreement through buy-side item harmonization and spend categorization while mentoring three engineers; presented the work at Palantir AIPCon.
- Delivered five supply-chain workflows across tens of thousands of SKUs, millions of transactions, hundreds of millions of dollars in spend, and thousands of U.S. facilities, applying FAISS-based entity resolution and NeuralProphet forecasting and anomaly detection.
- Led a four-person team analyzing thousands of manufacturing variables to identify chip-yield drivers and recommend controls for engineering review; authored a semiconductor R&D whitepaper.
- Independently designed a machine-tool telemetry anomaly-detection model for root-cause analysis that successfully predicted potential failure modes, alerted engineers, and enabled preventive maintenance in select cases, improving production throughput; presented the work at Palantir DevCon.

Ellington Management Group Apr. 2021–May 2022

Senior Quantitative Associate / Research Engineer *New York, NY*

- Developed alternative investment strategies for a $50M AUM portfolio targeting insurance companies with $1B+ in assets, across CLOs, ABS, CMBS, RMBS, and other fixed-income products.
- Automated fund attribution and daily cash-position reporting to accelerate portfolio-level risk and exposure monitoring.
- Built data-quality and workflow tools for trade surveillance, liquidity and risk monitoring, accounting, and reconciliation across 5+ trading desks, supporting portfolio managers.

Ontario Teachers' Pension Plan Sep. 2020–Dec. 2020

Quantitative Research Intern *Toronto, ON*

- Evaluated Black–Litterman and regularized portfolio-optimization methods for global macro strategies, reducing portfolio risk and improving P&L.
- Researched covariance-estimation techniques and built statistical benchmarks comparing internal strategies with external funds.

Ellington Management Group Sep. 2019–Dec. 2019

Quantitative Research Intern *Old Greenwich, CT*

- Rebuilt a factor-return and covariance pipeline from R in Python, reducing runtime from 30 minutes to 30 seconds.
- Back-tested NLP signals from SEC filings and analyzed factor crowding for a multifactor risk model.

TECHNICAL SKILLS

Languages & engineering: Python, SQL, MATLAB, Bash/UNIX, Git, FastAPI, React
AI & data: PyTorch, scikit-learn, PySpark, pandas, FAISS, NeuralProphet, NLP, LLM and agentic systems
Platforms & tools: Palantir Foundry/AIP, Model Studio, Claude Code/Cowork, OpenAI Codex
Domains: Motorsport telemetry, quantitative finance, supply chain, semiconductor manufacturing, biopharma

EDUCATION

Ph.D., Electrical Engineering, University of Toronto 2016–2021
Thesis: *The Design of Perovskite Nanomaterials for Light-Emitting Applications*

B.A.Sc., Honours Nanotechnology Engineering, University of Waterloo 2011–2016
Dean's Honours List (2015)

SELECTED RESEARCH

Patent

Semiconductor nanocrystal particles and production methods thereof. U.S. Application No. 16/254,676 (2019). Co-inventor with Jihyun M.I.N., E.J. Jang, H.S. Jang, A. Jain, E. Sargent, O. Voznyy, L. Levina, S. Hoogland, and M. Saidaminov.

First-Authored or Co-First-Authored Publications

1. **Todorović, P.**†, Ma, D.†, Chen, B., et al. (2019). Spectrally Tunable and Stable Electroluminescence Enabled by Rubidium Doping of $CsPbBr_3$ Nanocrystals. *Advanced Optical Materials*, 7(24), 1901440.
2. Ma, D.†, **Todorović, P.**†, Meshkat, S., et al. (2020). Chloride Insertion–Immobilization Enables Bright, Narrowband, and Stable Blue-Emitting Perovskite Diodes. *Journal of the American Chemical Society*, 142(11), 5126–5134.
3. Choubisa, H.†, **Todorović, P.**†, Pina, J. M., et al. (2023). Interpretable Discovery of Semiconductors with Machine Learning. *npj Computational Materials*, 9, 117.

Selected Co-Authored Publications

1. De Luna, P., Quintero-Bermudez, R., Dinh, C. T., et al. (2018). Catalyst electro-redeposition controls morphology and oxidation state for selective carbon dioxide reduction. *Nature Catalysis*. doi: 10.1038/s41929-017-0018-9.
2. Xu, J., Voznyy, O., Liu, M., et al. (2018). 2D matrix engineering for homogeneous quantum dot coupling in photovoltaic solids. *Nature Nanotechnology*. doi: 10.1038/s41565-018-0117-z.
3. Tan, H., Che, F., Wei, M., et al. (2018). Dipolar cations confer defect tolerance in wide-bandgap metal halide perovskites. *Nature Communications*. doi: 10.1038/s41467-018-05531-8.
4. Nam, D. H., Bushuyev, O. S., Li, J., et al. (2018). Metal-Organic Frameworks Mediate Cu Coordination for Selective CO_2 Electroreduction. *Journal of the American Chemical Society*. doi: 10.1021/jacs.8b06407.
5. Zhuang, T. T., Li, Y., Gao, X., et al. (2020). Regioselective magnetization in semiconducting nanorods. *Nature Nanotechnology*. doi: 10.1038/s41565-019-0606-8.

Additional 17 co-authored publications in journals including JACS, ACS Nano, and Advanced Materials. Full list available on Google Scholar.