Leonid Shpaner

Data Scientist, Educator

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Summary

Data scientist and adjunct faculty with 15+ years of experience in healthcare, education, and finance. Focus on predictive modeling to support clinical decision making, improve patient outcomes, and reduce mortality. Maintain open source libraries and contribute to peer-reviewed work in critical care.

Education

M.S., Applied Data Science, **University of San Diego** (GPA: 4.0/4.0) — Aug 2022
B.A., Economics, **University of California, Los Angeles (UCLA)** — Sep 2007

Professional Experience

UCLA Health, ***Data Scientist*** — Apr 2023 – Present

- First author of an abstract published by the *American Society of Nephrology*, reproducing gold-standard kidney function risk equations on internal EHR data; achieved AUCs in the 80th percentile and optimized Brier scores.
- Developed the `kfre` Python library and `kfre` R package, implementing Tangri et al.'s kidney failure risk equations for broad use in predictive healthcare analytics.
- Co-developed Python libraries `model_tuner` (machine learning workflow optimization, hyperparameter tuning, and pipeline automation) and `equiboots` (bias and fairness auditing), leveraging bootstrapping techniques for equitable model evaluation across diverse groups.
- Developed an XGBoost Regression model used in production to predict high-cost Medicare Advantage patients year-over-year; implemented system-wide, with a forthcoming paper detailing the project's impact and methodology.
- Developed an XGBoost model used in production to predict one-year mortality risk, facilitating timely transition to supportive (palliative) care.

Children's Hospital Los Angeles, ***Data Scientist*** — Mar 2022 – Oct 2022

- Developed an Extra Trees machine learning model in the pediatric ICU to predict post-terminal extubation mortality (AUC 0.88), resulting in a co-authored paper in *Pediatric Critical Care Medicine*.
- Ensured rigorous data quality and PHI compliance for a pediatric data collaborative involving multiple institutions.

Real Social Dynamics/Self Mastery Co., ***Sales Data Analyst*** — May 2014 – Dec 2023

- Automated sales reports in Excel using VBA and built SQL queries for revenue aggregation and client KPI analysis.

The Los Angeles Film School, ***Financial Analyst*** — Sep 2013 – Oct 2020

- Integrated financial reporting into Prophix CPM software, simplifying data processes.
- Automated reports with VBA macros, cutting 20 staff hours per month and enabling faster, data-driven decisions.

Teaching Experience

UCLA Extension, ***Instructor*** Aug 2023 – Present
- Instruct data science fundamentals, statistics, and basic machine learning in Excel and Python.

University of Maryland Global, ***Adjunct Professor*** Apr 2023 – Present
- Instruct undergraduate courses in data science and statistics with Python.

Purdue University Global, ***Adjunct Faculty*** Oct 2022 – Feb 2024
- Instructed database fundamentals, entity relationship diagrams, tables, and SQL in Access.

University of San Diego, ***Adjunct Professor*** Dec 2020 – Present
- Co-designed and instruct graduate statistics with Python course for the Applied AI program.
- Designed and instructed an Excel-based statistics course for the Data Analytics Certificate.

Cornell University, ***Course Facilitator*** Nov 2018 – Present
- Facilitate data analytics and statistics certificate courses.

Open Source Software

[1] **kfre** (Kidney Failure Risk Equation) [PyPI] [CRAN]
Python and R libraries implementing Tangri kidney failure risk equations.

[2] **model_tuner** (Workflow Optimization) [PyPI]
Helpers for ML pipeline optimization and tuning.

[3] **equiboots** (Fairness Auditing) [PyPI]
Bias and fairness auditing with bootstrapping.

[4] **model_metrics** (Performance Assessment) [PyPI]
Evaluation tools for classification and regression models.

Skills

Programming	Python, R, SQL, Git, JavaScript, LaTeX, HTML, CSS
Libraries	Python (NumPy, Pandas, Scikit-Learn, Statsmodels, SciPy, MLflow, AutoKeras, Aequitas, Flask, Dash Plotly), R (Ggplot, Tidyverse, Caret, e1071).
Platforms	Azure, BigQuery, Looker, Databricks, Access, Excel, Tableau
Specializations	Predictive modeling, machine learning, fairness auditing, time series
Languages	English (fluent), Russian (fluent), Spanish (basic)

Honors and Awards

UCLA Health | Staff Appreciation & Recognition (STAR) Award June 2025
- Recognized for work success and dedication to organizational goals.

Professional Development

Cornell University 2018 – Present
- Certificates in Data Science, Data Analytics, and related areas.

Talks & Workshops

Centers for Disease Control and Prevention (CDC)/NIOSH | **Data Science for Everyone Workshop** Jan 2022

- Designed and delivered a workshop on Python and R, focusing on data preparation, exploratory analysis, and supervised learning, including a practical case study on traffic accident data. [GitHub Repository] [Workshop Details]

University of California, Los Angeles (UCLA) | **Guest Lecturer - Economics Department** 2018 – 2023

- Guest lectured in ECON 104: Data Science for Economists (2023). [Recording]
- Instructed a summer workshop on Financial Modeling in Excel (2018). [Original Website] [Revamped Website]

Publications

[1] Winter, M. C., Zhou, A. X., Laksana, E. B., Aczon, M. D., Ledbetter, D. R., Avesar, M., . . . **Shpaner, L.** (2023). Death One Hour After Terminal Extubation in Children: Validation of a Machine Learning Model to Predict Cardiac Death After Withdrawal of Life-Sustaining Treatment in a Multicenter Cohort, 2009–2021. *Pediatric Data Science and Analytics (PEDAL) Network*. https://doi.org/10.1097/PCC.0000000000003772

[2] Winter, M. C., Zhou, A. X., Laksana, E. B., Aczon, M. D., Ledbetter, D. R., Avesar, M., . . . **Shpaner, L.** (2023). 50: Death One Hour After Terminal Extubation (DONATE): A Multisite Cohort Study. *Pediatric Critical Care Medicine*. https://doi.org/10.1097/01.ccm.0000998588.61397.ba

[3] **Shpaner, L.**, Petousis, P., Duru, O., Daratha, K., Norris, K. C., Tuttle, K. R., Nicholas, S. B., Bui, A. A. (2023). Kidney Failure Risk Equation Prediction in a Real-World Population with CKD (FR-PO936). *American Society of Nephrology Kidney Week, Abstracts*. https://doi.org/10.1681/ASN.20233411S1665a