

EUGENIO A. PEREZ

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SENIOR DATA SCIENTIST - AI RESEARCHER

Accomplished Data Scientist with expertise in experimentation, simulation, statistical analysis, and predictive modeling. Proficient in various programming languages, specializing in machine learning, control, optimization, and automation. Adept in applying advanced analytics across diverse domains, delivering rapid and impactful results on critical projects, and re-engineering processes to boost productivity and reduce costs. Piloting innovative problem-solving techniques, effective communications, and the development of relationships with stakeholders. Excelling in training teams and implementing advanced techniques to mitigate risks and increase profitability. Examples of adding value by:

- **Education and Training:** Monte Carlo simulations of markets (commodity, power, equity / options). Used these tools to teach customers and employees the basics of hedging exposures and technical and fundamental trading. Provided training in English, Japanese, and Spanish).
- **Strategic Client Modeling:** Created and tracked tens of customer statistics (trading ability, risk appetite, tendency to double down, etc.), enabling the development of data-driven personas. This resulted in much better understanding of clients and the ability to predict their future behaviors.
- **Reduced Attrition:** Designed and implemented a model to predict user attrition. Launched an email campaign to educate customers on safer trading practices. Thereby cut attrition from 1.5% to 0.8% (50% reduction).
- **Fully Automated Trading:** In addition to artificial intelligence signal generation and portfolio optimization, built an automatic execution and rebalancing AI to get better fills and to free up my time for further research and sales.

AREAS OF SKILLS

Team Development And Leadership, Optimization of Power Generation, Hedging Generation Outage Risk, Forecasting Load, Spot / Forward Curve Prediction, Innovation and Optimization, Predictive And Prescriptive Analytics, Thought Leadership, Mathematical / Statistical Modeling, Financial Engineering / Modeling, Business Development And Intelligence, Problem Solving, Practical Experience, Cross-Functional Collaboration, Model Assessment And Validation, Strategic Planning, Project Leadership, Asset Management And Portfolio Optimization, AI Trading Systems, Critical Thinking, Client Engagement And Relations, Distillation of Complex Concepts into Clear and Actionable Insights, ETL Pipelines and Warehouses, Communication (Written and Verbal), Digital Marketing and CRM, Product Development, Data Visualization And Reporting, Quantitative Finance, Various Asset Classes and Types of Derivatives, Electronic Trading Systems, Econometrics, Customer Success, Data Architecture, Change Management, Trading Strategies For Alpha

EDUCATION - LICENSES - LANGUAGES

Financial Risk Manager (FRM), equivalent to a **Masters in Financial Risk** - Global Association of Risk Professionals

Chartered Financial Analyst (CFA), equivalent to a **Masters in Financial Investments** - CFA Institute

Bachelor of Arts *magna cum laude* in Economics and East Asian Studies - Harvard University

Series 3 (commodity futures and options) - Financial Industry Regulatory Authority (FINRA)

Languages: Fluent Japanese, Spanish, and English. Intermediate French

PROFESSIONAL EXPERIENCE - DEFINED ROLES & NOTABLE CONTRIBUTIONS

TradeStation

An online broker with a suite of powerful trading technology for self-directed traders and investors.

Director of Data Science and Quantitative Analysis (09/2017 - 06/2023)

- Piloted the firm's first data science practice. Created and tracked tens of customer statistics (trading ability, risk appetite, tendency to double down, etc.). Used that data to segment clients, to predict consumer behaviors like attrition, the desire for education, and future revenue (further and further back in the funnel) and to optimize marketing and retention efforts.
- Built prototype AI stock pickers, a recommender system, portfolio optimizers, and a user risk system.
- Engineered and implemented a model to predict client attrition. Launched an email campaign to educate traders on safer trading practices and was able to cut attrition from 1.5% to 0.8% (50% reduction).

Key Skills: Data Analysis, Data Modeling, Forecasting, Revenue Improvement, Risk Management

continued

DUNN Capital Management

One of the oldest managed futures firms in the industry with 100% quantitative, systematic trading strategies.

Research Associate (06/2015 - 09/2017)

- Asked to take this role to focus on challenges within the existing process, specifically to address a lack of discipline and direction regarding data. Designed and coded a robust MYSQL database to organize, process, and correct all the data used in Research and Marketing, improving overall productivity.
- Generated hundreds of millions of accurate data items on all markets the company trades, reducing monthly reporting time from three days to minutes.

Key Skills: Process Improvement, Data Integrity, Statistical Data Validation, Database Design, Solutions Delivery

EDAC Trading LLC

One of the first all AI-managed futures companies.

Principal / Research Partner (01/2012 - 06/2015)

- Spun-off the artificial intelligence futures trading system from III Capital Management into an independent firm with two other partners. Developed business operations and trading systems and contributed to sales, growing assets under management (AUM) to \$60M.

Key Skills: Artificial Intelligence, Automatic Execution and Rebalancing, Business Operations, Capital Raising

ADDITIONAL EXPERIENCE**III Capital Management - Commodities Trader and Researcher**

- Created the all-AI III Neural Networks Fund, which generated a 38% return for investors over the first three years.

NextEra Energy - Manager of Risk Analytics and Structured Transactions

- Developed a framework of models and materially reduced long-term fuel cost risk for power generation.

Enron - Director of Fundamental Analysis in Industrial Markets

- Structured & valued complex commodity derivatives; created liquidity-adjusted storage/transport VaR models.

Deutsche Bank Securities - Assistant Vice President of Equity Risk Control

- Rebuilt key parts of the new risk system and expanded its launch to all eight Equity desks in the New York office.

Sumitomo Life America - Vice President of Risk

- As the first risk manager, designed and launched a complete risk management system. Managed \$50 MM with my own quantitative model, and outperformed the benchmark by 5% (1993-1995).

INDUSTRY RELEVANCE - TECHNICAL ACCUMEN - SKILLS

Industry Relevance: Research & Development, Financial Services, Advertising & Marketing, Colleges & Universities, Training, Electricity, Oil & Gas, Lending & Brokerage, Data Collection & Internet Portals, Software as Service / SaaS (Business Intelligence / BI, Storage & System Management, Fintech, Database & File Management).

Software, Applications, Languages, Frameworks: Python (NumPy, SciPy, Statsmodels, Scikit-learn, Pandas, PyODBC), VBA (Visual Basic for Applications for Microsoft Excel, Outlook, and Access), MATLAB, SQL (MySQL, MS Access SQL, SQL Server), Cloud (AWS computing, storage, database), Visualization (Matplotlib, MATLAB, Excel, PowerPoint, Power BI), Version Control (GitHub).

Methodologies: Normalization (Data Mining, Feature Selection, Cornish-Fisher, PCA For Dimensionality Reduction, Anomaly Detection, Estimation Of Missing Data), Validation (Statistical Outlier Detection, Importance Voting), Classification (Gaussian Classifiers, Support Vector Machines, K-Nearest Neighbors, Naïve Bayes), Experimentation (Design Of Experiments, Balanced Designs, Full And Fractional Factorials, Orthogonal Designs), Statistical Analysis (Time Series Analysis, A/B Testing, Hypothesis Testing, Cross Validation, Statistical Significance Test, ANOVA), Valuation (Binomial Methods), Simulation (GARCH Monte Carlo, Brownian Motion, Cholesky Decomposition), Prediction and Control (Neural Networks: Shallow And Deep, Supervised and Unsupervised, Ensemble Methods, The Various Types Of Multivariate Regression, Decision Trees And Forests, Parametric VaR, Natural Language Processing), Optimization (Ant Colony Algorithm, Swarm Algorithms, Evolutionary / Genetic Algorithm, Portfolio, Multi-Objective Pareto, CAPM Efficient Frontier, Stochastic, Tabu Search, Simulated Annealing, Reinforcement or Adversarial Learning)