PATRICK HOULIHAN, PhD

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OBJECTIVE

Lead, coach, enrich and mentor curious minds through leveraging nearly 20 years of experience in system design and data analytics

EXPERIENCE

Publicis Media
Vice President, Data Science 2017 - Present

- Responsible for algorithm development in Python utilizing the Spark Hadoop ecosystem for various predictive analytic initiatives leveraging the spark.ml machine learning framework
- Continually building and managing a team of data scientists
- Responsible for numerous short-term, mid-term and long-term data science initiatives
- Act as conduit between data science and product planning

Columbia University
Adjunct Assistant Professor 2017 - 2018

- Developed and taught COMS W6998 "Topics in CS: Projects of Data Science: A First Course"
- Taught full day workshops on advanced Python and Machine learning techniques

CaliberMind Corporation
Head of Data Science 2016 - 2017

- Responsible for building out (Python) Machine Learning and Natural Language Processing capabilities to include the following algorithms: content matching, ideal customer profile, likelihood of converting, B2B buyer journey and attribute outcome simulator
- Streamlining overall data science initiatives
- Managing internal and external data science resources

Stevens Institute of Technology, Hoboken, NJ
Adjunct Professor and Lecturer – Computational Finance 2014 - 2016

- Theoretical and practical approaches to managing investments: FIN627
- Applying data structures and object oriented design in financial applications: QF465 and QF365
- Data mining and analysis of large data sets utilizing SQL and MongoDB databases: QF104
- Technical and fundamental research techniques using the Bloomberg terminal: QF103
- Introduction to the theory and analysis of Macroeconomic theory: BT243
- Multi-asset portfolio optimization theory and techniques: BT181

Quantheta, LLC
Co-Founder and CEO/CTO 2013 - 2016

- Conceptualized, architected and deployed real-time financial data analytics software as a service
- Implemented real time streaming analytics sentiment scoring engine
- Leveraged numerous machine learning algorithms for textual based classification
- Created numerous statistical based scripts in R and Python
- Designed and implemented large scale big data mongo sharded cluster
- Streamlined processes through bash scripts in conjunction with crontab to ensure quality of service
- Developed and implemented algorithmic sentiment trading with Sharpe ratios in excess of 4
- Managed all aspects of product development, employees, contractors and vendors

Semiconductor Industry Experience

- Professional experience incorporates 14+ years of Field Application Engineering consulting roles responsible for supporting in excess of 500 million dollars' worth of design wins. Major assignments included:

- Field Applications Engineer: Managed multiple resources and acted as the main technical liaison at Nvidia Corporation for both domestic and overseas engagements with major account Dell, specifically Shanghai China, OEMs and ODMs.
- Field Applications Engineer: Managed internal and external Altera Corporation resources for both pre and post design-in process for major account Hewlett Packard.
- Field Applications Engineer: Served as the primary interface between the customer and internal resources at Multilink Technology Corporation for the largest telecommunication accounts

EDUCATION

STEVENS INSTITUTE OF TECHNOLOGY, Hoboken, NJ
Doctor of Philosophy in Financial Engineering (Ph.D.)

- May 2016
- Doctoral dissertation topic: *Forecasting Asset Price Direction through Sentiment*.
  Quick research abstract: Investigated both the individual and combined predictive capability of two investor sentiment indicators; one extrapolated from social media, text based, and one extrapolated from derivative data, market data based, for use in a predictive analytics framework.
- Relevant Coursework included: Machine Learning, Natural Language Processing, Stochastic Processes, Computational Methods in Finance, Time Series Analysis, Algorithmic Trading Strategies, Portfolio Theory and Research Methodologies.

PUBLICATIONS AND PRESENTATIONS

- *Leveraging a call-put ratio as a trading signal*, Quantitative Finance, November 2018
- *Risk Premium of Social Media*, The Journal of Investing, August 2017
- *Can Sentiment Analysis and Options Volume Anticipate Future Returns?*, Computational Economics, May 2015
- *Can social media and the options market predict the stock market behavior?* Proceedings of the 21st International Conference on Computing in Economics and Finance, Taipei, June 2015
- *Leveraging Social Media to Predict Continuation and Reversal in Asset Prices*, the 41st Eastern Economic Association Annual Conference, New York, NY, February 2015
- *Leveraging a call-put ratio as a Trading Signal*, the 5th Annual Modeling High Frequency Data Conference, Stevens Institute of Technology, October 2013

Additional Academic Qualifications

DREXEL UNIVERSITY, Philadelphia, PA

- Master of Business Administration (M.B.A.)
- Bachelor of Science in Electrical Engineering (B.S.E.E.)

COMPUTER SKILLS

- Proficient in PySpark, Python, JAVA, Spark, R, MongoDB, Verilog, VHDL, Google Analytics, SEO, AWS