

EDWARD HAK-CHUNG LEUNG, Ph.D.

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SUMMARY:

Experienced Senior Quantitative Research Analyst with a demonstrated history of research in quantitative asset management. Extensive experience in applying alternative data and machine learning in conducting quantitative research in equity factor investing. In addition, solid experience in conducting due diligence on hedge funds for fund of funds and applying quantitative methods to detect style drift of hedge funds. Strong experience in applying quantitative approach on hedge fund indices construction.

PUBLISHED RESEARCH REPORTS:

“The Promises and Pitfalls of Machine Learning for Predicting Cross-Sectional Stock Returns,” (Co-authored with Harald Lohre, David Mischlich, Yifea Shea, and Maximilian Stroh), *Journal of Financial Data Science*, Spring 2021.

- **Winner of CFA Germany Investment Research Award 2021.**

“Consumer Spending and the Cross Section of Stock Returns,” (Co-Authored with Tarun Gupta and Viorel Roscovan), *Journal of Portfolio Management*, July 2022.

- **Winner of CFA Germany Investment Research Award 2022.**

“Machine Learning: Building Factors from Unstructured Data,” (Co-Authored with Tarun Gupta), *Risk & Reward*, 2nd Issue, Invesco, 2021.

“Invesco’s Guide to Alternative Data,” (Co-Authored with Tarun Gupta), *Risk & Reward*, 4th Issue, Invesco, 2020.

“A Forecast Combination Approach to Equity Factor Timing” (Co-authored with Michael Fraikin and Harald Lohre), *Risk & Reward*, 1st Issue, Invesco, 2020.

- Featured in June 2020 issue of *Journal of Quantitative Research, Economics, and Strategy* by Wolfe Research).

“Patent Data as a Driver of Equity Returns” (Co-authored with Michael Fraikin), *Risk & Reward*, 2nd Issue, Invesco, 2019.

“Factor Investing: Building Balanced Factor Portfolios” (Co-authored with Andrew Waisburd), *Risk & Reward*, 1st Issue, Invesco, 2017.

CONFERENCES:

Presenter at the Neudata Summer Summit on “What is the Promise (or Pitfalls) of Machine Learning for Alternative Data?” June 2021.

Panel discussant on transaction data at the Neudata Winter Summit, December 2020.

INDUSTRY EXPERIENCE

June 25th, 2024 to present

ARIEL INVESTMENTS, New York, New York

Director of Quantitative Research

- Conducting quantitative research.

NON-COMPETE PERIOD

July 1st, 2022 to June 25th, 2024

SELF-EMPLOYED, New York, New York

Self-Initiated Projects with Hugging Face, AWS SageMaker, and Databricks

- Built sentiment models with Yelp customer reviews and **Distilled BERT**.
- Built topic models with Yelp customer reviews using **Gensim** and **SciKit Learn**.
- Processed image data and built classification models with Dogs vs. Cats images and **ResNet**.
- Experience with AWS **AutoPilot/JumpStart** and Databricks **AutoML/MLFlow/Spark**.
- Built my website <https://EdwardEconPhD.com> using WordPress hosted at AWS LightSail.

INDUSTRY EXPERIENCE:

Nov. 2007 to June 2022

INVESCO QUANTITATIVE STRATEGIES, New York, New York

Senior Quantitative Research Analyst

- Developed a spreadsheet that contains various criteria to evaluate alternative data sets/vendors.

- Conducted due diligence on alternative data vendors.
- Tested a US industry specific factor for Consumer Discretionary using **transaction data**.
- Tested a US industry specific factor for Biotech and Semiconductor using **patents data**.
- Applied machine learning techniques such as **LASSO** and **Random Forests** via H2O and R to predict cross sectional stock returns.
- Developed **factor timing** models using forecasts combination and Bayesian Learning such as Dynamic Model Averaging (DMA) via R.
- Developed and tested volatility smirk as a factor for asset selection using SAS and **OptionMetrics**.
- Built and tested customized risk models using Axioma Risk Model Machine and Axioma Portfolio for various products such as long only, market neutral, and low volatility products.
- Run simulations using Axioma Portfolio for various products on a regular basis.
- Investigated ideas for new factors from various articles and journals for asset selection.

Aug. 2005 to Nov. 2007

BEAR STEARNS ASSET MANAGEMENT, New York, New York

Associate Director

- Conducted performance attributions of hedge fund returns using multivariate regressions, clustering techniques, and **S+** to detect style drift.
- Conduct initial and on-going due diligence on hedge funds for Bear Stearns Fund of Hedge Funds, Hedge Select, and Advisory.

Nov. 2004 to Aug. 2005

STANDARD & POOR'S, New York, New York

Director of Global Fixed Income

- Applied logistic regressions using **S+** and **Perl** to determine the value added of S&P CreditWatch/Rating Outlooks in terms of predicting subsequent rating change.

March 2003 to Nov. 2004

STANDARD & POOR'S, New York, New York

Director/Quantitative Portfolio Analyst of Portfolio Services

- Conducted the process of statistical screening of hedge funds in various strategy spaces so as to maintain style purity in each strategy of the S&P Hedge Fund Index using **S+**.
- Conducted asset based regressions on equity long/short funds using **S+** so as to distinguish the high/low beta and market timers/non market timer funds.

Dec. 1999 to June 2002

KNIGHT TRADING GROUP/DEEPHAVEN CAPITAL MANAGEMENT, Jersey City, NJ

Quantitative/Statistical Analyst

- Devised liquidation policy so as to improve traders' performance by examining the optimal position holding period using order flow data from each trading account.
- Examined the profitability of various proprietary-trading strategies using "Street" order flow data via the **Perl** Simulator.
- Identified ways to minimize slippage by writing **SQL** scripts to produce slippage reports by order size and various slippage measures (also produced slippage reports using **AWK**).

July 1997 to July 1999

PORTFOLIO MANAGEMENT ASSOCIATES, INC., New York, New York

Senior Associate

- Building credit risk models for credit cards companies.

ACADEMIC EXPERIENCE:

Fall 2009

NEW YORK UNIVERSITY, New York, New York

Adjunct Assistant Professor

- Designed and taught a course on Econometrics that aimed at enhancing Master of Arts students' understanding of the techniques and applications of Econometrics/Statistics to real world scenarios.

Fall 2002 to Spring 2005

COLUMBIA UNIVERSITY, New York, New York

Adjunct Assistant Professor

- Designed and taught a course on Econometrics that aimed at enhancing Master of Public Administration students' understanding of the techniques and applications of Econometrics/Statistics to real world scenarios.
- Designed and taught an undergraduate seminar course for Seniors on Economic Growth that aimed at enhancing students' understanding of income and growth rates disparity

among countries and approaches to conduct quantitative research.

EDUCATION:

1990-1997

UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pennsylvania
Doctor of Philosophy in Economics, August, 1997
Thesis advisor: Roberto Mariano

1986-1989

NORTHWESTERN UNIVERSITY, Evanston, Illinois
Bachelor of Arts in Economics, June, 1989
Thesis advisor: Kyle Bagwell

COMPUTER SKILLS:

Software experience includes **Axioma Portfolio and Axioma Risk Model Machine, FactSet Programmatic Environment/Performance Attribution.**
Programming experience with SAS, SQL, R, Python/Jupyter Notebook/Google Colab, AWS SageMaker, Hugging Face, Spark/Databricks, Git, and WordPress.

HOBBIES:

Tennis, Argentine Tango, Film Production, Member of the Econometric Society, American Finance Association, Society of Quantitative Analysts.

PERSONAL:

US Citizen.