Charlie Wilson

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Analytical and data-driven professional with a Ph.D. in Geophysics and 20 years of experience leading investment research teams to deliver global insights and decisions. Applies modern data science methods to financial, economic, and policy questions, and has built collaborative research platforms that strengthen analytical rigor and institutional decision-making. Recent training in applied data science (MIT, Google) complements expertise in financial modeling, scenario-based risk assessment, and cross-country macroeconomic comparisons. Proficient in Python, machine learning, and exploratory data analysis, with a track record of translating technical complexity into clear, actionable insights. Experienced leader who mentors teams, drives innovation, and aligns analytical rigor with organizational strategy.

WORK EXPERIENCE

Thornburg Investment Management | Santa Fe, NM | 05/2012 - 05/2025

Thornburg is a Santa Fe–based asset manager with ~$50B in AUM known for its global investment focus and high-conviction investment approach rooted in deep fundamental research.

Portfolio Manager, Managing Director, Emerging Markets Equity | 02/2015 - 05/2025

- Directed investment research across emerging markets, integrating financial, macroeconomic, and policy data into scenario-based models that drove investment decisions.
- Designed and maintained tools in Python and Excel to integrate financial, macroeconomic, and policy data for scenario modeling, risk monitoring, and cross-country comparison.
- Produced thematic research and investment memos translating technical and geopolitical developments into actionable investment opportunities.
- Collaborated across disciplines to structure economic and market data, enhance research workflows, and align investment strategy with global macro and regulatory trends.

Director of Research, Managing Director | 09/2019 - 01/2021

- Led firmwide effort to standardize investment research practices across a global equity platform, developing consistent workflows, data structures, and documentation standards to improve analytical quality and institutional knowledge sharing.
- Built a centralized research platform to streamline data input, project coordination, and thematic tracking across teams, improving transparency and reducing duplication of effort.
- Integrated ESG indicators and policy-relevant factors into core research workflows, aligning analysis with sustainability frameworks and emerging regulatory considerations.
- Guided analysts in research design, execution, and communication, elevating clarity, independence, and analytical rigor across the investment team.

Portfolio Manager, Managing Director, ex-US Equity | 01/2014 - 09/2015

Associate Portfolio Manager | 05/2012 - 12/2013

SKILLS

Data Tools & Visualization: Excel, Tableau, PowerPoint, Bloomberg, Factset

Languages & Libraries: Python (pandas, NumPy, scikit-learn, matplotlib, seaborn), MATLAB, R, Markdown

Analytics & ML Methods: Evaluation Metrics (ROC AUC, precision/recall, R^2), Linear/Logistic Regression, K-nearest neighbor, K-Means, PCA, Decision Trees, Random Forests, Time Series Analysis

Workflow & Tools: Git/GitHub, Jupyter, VS Code, Cursor, R Studio

EDUCATION

Micro Master's in Data Analytics

Georgia Tech
Online (Currently Enrolled)
08/2025 - 12/2025

Professional Education Certificate in Applied Data Science

M.I.T.
05/2025

Ph.D. in Geophysics

University of Colorado, Boulder
Boulder, CO

Marsico Capital Management | Denver, CO | 01/2006 - 05/2012

Marsico Capital is a high-conviction equity manager known for deep research and concentrated portfolios. I was recruited for my scientific background and quickly developed broad sector fluency and analytical depth, expanding from core coverage in energy and materials into payments, technology, and healthcare.

Senior Analyst, Partner | 10/2007 - 05/2012

- Applied scientific and technical training to analyze companies in the energy, materials, and agriculture sectors, evaluating asset quality, production technologies, and cost structures to inform investment decisions.
- Expanded sector coverage to payments, technology, transportation, and healthcare by conducting deep industry research, competitive analysis, and valuation modeling to generate high-conviction investment ideas.

Equity Analyst | 01/2006 - 10/2007

Columbia University, Lamont-Doherty Earth Observatory | New York, NY | 01/2005 - 12/2005

Research Scientist | 01/2005 - 12/2005

- Conducted quantitative analysis of seismic and geophysical data to model lithospheric deformation across complex tectonic zones, including California, New Zealand, and the Southern Apennines.
- Applied time series and statistical analysis to large seismic datasets, using high-performance computing to process waveforms, extract temporal patterns, and enhance image resolution through advanced modeling techniques.

Stanford University, Department of Geophysics | Palo Alto, CA | 11/2003 - 12/2004

George A. Thompson Postdoctoral Research Scholar | 11/2003 - 12/2004

- Adapted seismic processing workflows to analyze earthquake wavefields and improve imaging of plate boundary structures using advanced signal processing techniques.
- Managed large-scale geophysical datasets and leveraged high-performance computing environments to execute parallelized workflows for seismic data processing, model sensitivity testing, and image resolution enhancement.

CERTIFICATIONS

Google Advanced Data Analytics Certificate | 01/2025 - 06/2025
Coursera

Python Fundamentals for Finance Credential | 12/2024
PyFi

Fundamentals of Sustainable Accounting Credential | 10/2021
Sustainability Accounting Standards Board

VOLUNTEERING & LEADERSHIP

Powering Potential | 09/2025 - Present
Board Member

New Mexico Climate Investment Center (NMCIC) | 06/2025 - Present
Finance and Investment Committee member | Santa Fe, NM

University of Colorado, Boulder | 01/2020 - 09/2023
Advisory Board, Department of Geological Sciences

B.S. in Geology

University of Arizona, Tucson
Tucson, AZ

PROJECTS

Predictive Modeling of Passenger Experience: Shinkansen Case Study

Hackathon Winner, MIT Applied Data Science Program

Built a machine learning model to predict passenger satisfaction on Japan's Shinkansen Bullet Train using integrated travel and survey datasets. Cleaned and merged raw passenger and operational records, engineered predictive features, and evaluated multiple models including logistic regression, K-nearest neighbors, gradient boosting, XGBoost, CatBoost, and Random Forest. Applied grid search, Optuna, and cross-validation for model tuning. Random Forest achieved the best performance. Identified key drivers of satisfaction to inform service design and customer experience policy.

Macro Factor Modeling for Emerging Markets

Built a custom PCA-based factor model in Python to analyze how macroeconomic, commodity, FX, and interest rate variables influence equity returns across major emerging markets. Applied rolling regression techniques and time series analysis to identify evolving macro sensitivities and improve portfolio strategy.