

# Charlie Wilson

Washington D.C. | (917) 763 5712 | charliekwilson@gmail.com | linkedin.com/in/charlie-wilson-dc

---

Technically trained researcher and investor with a Ph.D. in geophysics and 20 years of experience analyzing complex global systems. Personally conducted in-depth research and investment analysis on the AI and technology supply chain across North Asia, including China, South Korea, and Taiwan, while leading a team focused on broader emerging markets. Gained firsthand insight into the firms, infrastructure, and geopolitical dynamics driving the global AI arms race. Recent training in data science from MIT and Google builds on expertise in computational modeling, scenario-based risk assessment, and cross-disciplinary analysis. Skilled at translating technical complexity into clear insights for policymakers, investors, and national security stakeholders. I believe generative AI is one of the most consequential technological shifts of our time, with the potential to reshape labor markets, global economic structures, and geopolitical power dynamics. I am eager to contribute rigorous, cross-disciplinary analysis to help policymakers navigate this complex and fast-evolving landscape.

## 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**

- Led in-depth analysis of the AI and technology supply chain across China, South Korea, and Taiwan, developing insights into firms, infrastructure, and geopolitical dynamics at the center of the global AI arms race.
- Directed a research team focused on broader emerging markets, managing timelines, mentoring analysts, and ensuring consistent analytical rigor across countries and sectors.
- Evaluated the strategic positioning of semiconductor, foundry, and platform companies in the context of industrial policy, export controls, and U.S.-China technology competition.
- 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.

## SKILLS

---

### **Data Tools & Visualization:**

Excel, Tableau, PowerPoint, Bloomberg, Factset

### **Languages & Libraries:**

Python (pandas, NumPy, scikit-learn, matplotlib, seaborn), MATLAB

### **Analytics & ML Methods:**

Evaluation Metrics (ROC AUC, precision/recall,  $R^2$ ), Linear/Logistic Regression, K-Means, PCA, Decision Trees, Random Forests, Time Series Analysis

### **Workflow & Tools:** Git/ GitHub, Jupyter, VS Code

### **Policy & Economic Research:**

IEA/OECD/DOE data, World Bank/IMF datasets, SASB framework, geopolitical risk analysis, cross-country macroeconomic comparisons

## EDUCATION

---

### **Professional Education Certificate in Applied Data Science**

M.I.T.  
05/2025

### **Ph.D. in Geophysics**

University of Colorado,  
Boulder  
Boulder, CO

- Guided analysts in research design, execution, and communication, elevating clarity, independence, and analytical rigor across the investment team.
- Collaborated with cross-functional stakeholders to ensure research outputs supported broader portfolio strategy, risk management, and thematic positioning, particularly in areas with high policy sensitivity such as technology, healthcare, and energy.

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

**Associate Portfolio Manager | 05/2012 - 12/2013**

**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

## 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 Brazil, India, and South Africa. Applied rolling regression techniques and time series analysis to identify evolving macro sensitivities and improve portfolio strategy.