

# Alan Feder

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## EXPERIENCE

- **Invesco** New York, NY / remote  
*Senior Principal Data Scientist* *February 2023 - September 2023*  
*Principal Data Scientist* *September 2018 - February 2023*
  - **Created a ChatGPT-powered tool** analyzing public comments on proposed government regulations
    - \* Classified stakeholder sentiment, pinpointing support or opposition
    - \* Grouped and synthesized arguments, identifying key themes and measuring consensus
  - **Devised a real estate-specific NLP-based sentiment signal** to forecast index prices across real estate sub-sectors, highlighting sector-wide price changes 5 months before they show in the private market indices
  - **Enhanced internal chatbot** by enabling the summarization and comparison of related PDF documents, leveraging LangChain and vector databases
  - **Introduced a trending topic tracker** using LDA to highlight newly popular news & social media themes
    - \* Enabled Invesco to develop new thematic ETFs at least 3 months before competitors
  - **Developed an ensemble predictive model** for multifamily residential real estate
    - \* Predicted which neighborhoods will increase in rent, outperforming the benchmark by 8%
    - \* Ensembled multiple xgboost models to account for incompatible datasets
  - **Won an internal Kaggle-style competition** predicting outflows from Invesco mutual funds
    - \* Leveraged categorical embeddings via neural networks for xgboost models and visualized them with t-SNE
  - **Organized initiatives** for internal Citizen Data Scientist program
    - \* Oversaw capstone projects including cloud cost forecasting, leading to 20% increase in forecast accuracy, and the development of a new internal document search tool
    - \* Taught 12 investment professionals & 15 tech professionals lessons about machine learning
- **AIG Science** New York, NY  
*Data Scientist, Senior Manager* *July 2014 - September 2018*
  - **Managed a team** of three junior data scientists and one junior business analyst.
  - **Enhanced workers' compensation claims forecasting**
    - \* Boosted the accuracy of cash flow projections by 50% with a generalized additive model.
    - \* Derived actionable business insights from the model using marginal contribution plots
  - **Streamlined travel insurance claims handling**
    - \* Improved throughput by 30% by deploying a GBM model, pre-approving low-risk claims
- **Swiss Re America** Armonk, NY / New York, NY  
*Pricing Actuary* *June 2010 - June 2014*

## TECHNICAL SKILLS

- **Languages & Tools** : Python, SQL, R, git, bash, AWS (S3, EC2, Sagemaker, Athena), Airflow, markdown, quarto
- **AI/ML Models** : LLMs, transformer-based neural networks, xgboost, GLM, GAM, LASSO/ridge, LDA, word2vec
- **Packages** : numpy, pandas, scikit-learn, statsmodels, openai, transformers, langchain, keras, xgboost, spacy, gensim, streamlit, altair, dplyr, ggplot2, mgcv

## EDUCATION

- **Graduate School of Arts & Sciences, Columbia University** New York, NY  
*Master of Science in Statistics* *May 2010*
- **Columbia College, Columbia University** New York, NY  
*Bachelor of Arts - Major: Mathematics, Concentration: Economics* *May 2009*

## PRESENTATIONS, PUBLICATIONS, AND COMPETITIONS

- **Risk and Reward** : Elizabeth Cohen, **Alan Feder**, et. al. "[Stocks move on surprises: Using sentiment information for active portfolio management](#)." vol. Q3 2022, Invesco, 14 Oct. 2022, pp. 21-25.
- **Data Science Salon** : [NLP in Finance: Beyond Predicting Alpha](#), March 2022
- **Data Science Salon** : [Machine Learning Interpretability: How to Understand what your ML Model is Doing](#), Feb 2021
- **rstudio::global(2021)** : [Categorical Embeddings: New Ways to Simplify Complex Data](#), Jan 2021
- **Kaggle** : 4th Place (out of 5,156) [Porto Seguro's Safe Driver Prediction](#), Nov 2017