

# Terrance Oey

ECONOMIST · DATA ENGINEER · DATA SCIENTIST

Baltimore, MD

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## Technical Skills

<b>Programming</b>	Python, SQL, PySpark/Spark, R, ArcGIS, QGIS, SAS, PowerShell, Batch, Stata, Matlab, Mathematica, EViews Artificial Intelligence (AI), Large Language Models (LLMs), Machine Learning (Random Forest, Decision Tree, Fuzzy Matching, Neural Network,
<b>Modeling</b>	Natural Language Processing, Grid Search, Logistic/Multi-linear Regression), Optimization, Genetic Algorithm, Forecasting (Holt-Winters, ARIMA), Static/Dynamic Discrete Choice, Simulation
<b>Software</b>	Databricks, Snowflake, Tableau, Power BI, Docker, ArcGIS, Microsoft Office Suite, Git, TFS/Azure DevOps, Linux, LaTeX

## Experience

### Federal Deposit Insurance Corporation

Arlington, VA

DATA ENGINEER (CG-15)

January 2022 - Present

- Analyzing and cleaning 1+ TB of failed bank data in a high compute environment using SQL and PySpark
- Spearheading the coding of the automation of the Research Information System (RIS) Extract, Transfer, and Load (ETL) process, migrating workflows to the Azure Enterprise Data Lake (EDL) to enhance data accessibility and efficiency
- Currently modernizing the RIS ETL pipeline by converting 10,000+ lines of SAS code into an ETL pipeline using Spark in Azure Databricks for the EDL
- Engineering a data extraction framework in PySpark to structure over 2 million unstructured 10-K SEC reports, facilitating advanced financial analysis in the [joint cloud computing environment \(JADE\)](#)
- Execute and maintain an ETL pipeline that creates the [RIS data](#), a critical set of historical bank data used to create the [Quarterly Banking Profile](#) and support [Bankfind Suite](#), a public GUI interactive tool
- Direct and sustain the weekly Risk-Related Premiums (RRP) ETL pipeline, ensuring timely financial data (+80K rows) delivery for determining [bank assessment rates](#)
- Automate the generation of 100s of complex financial reports using Python and SQL, reducing report creation time from 1+ week to just 15 minutes
- Designed and deployed an interactive Power BI dashboard, enabling non-technical financial analysts to explore complex financial ratios
- Worked on Hurricane mapping dashboard in ArcGIS that allows analysts to monitor the path of hurricanes using data from National Hurricane Center (NHC)/National Oceanic and Atmospheric Administration (NOAA) and internal data
- Researching and prototyping AI/ML applications in Databricks, including Large Language Models (LLMs) for summarizing and structuring unstructured financial data
- Built an interactive data exploration interface in Azure Databricks using widgets that executes in less than 15 seconds, replacing the Databank SAS AF tool, that runs for over 5 minutes, with an intuitive point-and-click solution
- Wrote internal code in Python/SQL and internal documentation on [merger adjusting and merger adjusting by period intervals](#)

### University of Maryland Baltimore County (UMBC)

Catonsville, MD

LECTURER

August 2023 - December 2023

- Taught [DATA 601: Introduction to Data Science](#), developing a 15-week curriculum from scratch that provided students with a strong foundation in data cleaning, analysis, and machine learning principles through comprehensive lectures, assignments, and two hands-on class projects
- Engineered a real-world data assignment by scraping live library capacity data every 15 minutes using Python, generating a unique dataset of 37,000+ rows for students to analyze and derive insights

### United States Citizenship and Immigration Services

Camp Spring, MD

SENIOR DATA ANALYST (GS-14)

March 2019 - January 2022

- Fulfilled 100s of high-priority data requests from Congress, the White House, and the Department of Homeland Security (DHS), supporting policymaking decisions with same-day turnaround times
- Led the analytical portion in updating the public facing United States Citizenship and Immigration Services (USCIS) front facing [current processing times](#) and the [historical processing times](#) websites for all immigration and naturalization forms on a monthly basis
- Authored and implemented explanatory content detailing old vs. new processing time methodologies, enhancing public transparency on the [more info webpage](#)
- Architected and built a comprehensive suite of Tableau dashboards from the ground up, consolidating over 10 fiscal years of immigration data—including receipts, approvals, denials, completions, pending cases, and processing times—to empower senior leadership with real-time, data-driven insights using 10s of billions of transactional rows of immigration data

- Created and maintain reusable code in Databricks/Cloud using Spark SQL and Python that vastly improved upon currently used code in SAS/Oracle that is used by the [Office of Performance and Quality, Performance Analysis and External Reporting Division](#)
- Investigated and resolved a critical data anomaly affecting 7+ million records, collaborating with cross-functional teams to ensure database accuracy
- Led the development, analysis, and presentation to senior leadership concerning [Office of Inspector General \(OIG\) Report](#) to develop a better metric for processing times for green cards

## Social Security Administration

Woodlawn, MD

ECONOMIST (GS-13)

November 2015 - March 2019

- Collaborate with the Office of Modeling (OM) to enhance an anti-fraud model using machine learning algorithms, optimizing the prediction of overpayment recoveries with the potential to save the agency \$10+ millions of dollars
- Developed a performance metric with inputs from SMEs for 100s of Social Security Administration's (SSA) employees working in the Office of Adjudication Operations (OAO) while utilizing resources such as the Enterprise Data Warehouse (EDW), SQL, SAS, and R with transactional data from Management Information Hearings Appeals and Litigation (MHAL) and Master Hearings and Appeals Operational Data Store (MHAODS) (both over 100,000+ rows)
- Lead the data wrangling and settled on a latent model for the Impact of Administrative Law Judge (ALJ) Decision Writer Instructions project, conducting sensitive data analysis from nearly 1,000+ survey responses across decision writers in the San Francisco Region (Region IX) to assess efficiency and quality improvements

## Summit Consulting LLC

Washington, D.C.

SENIOR ANALYST

June 2014 - October 2015

- Worked on a team with several PhDs at The U.S. Department of Treasury - Bureau of Fiscal Service - Debt Management Services (DMS) to increase their delinquent debt collections and resolutions
- Data wrangled internal sensitive and confidential transactional level data on 100,000+ of debts across all federal agencies and external data from the American Community Survey (ACS) in Stata to create research datasets in preparation for conducting descriptive analysis and advanced analytical research

## Honors & Awards

2024	<b>Mach Award: Rewrote and converted large pieces of SAS ETL code into PySpark in Azure Databricks,</b> Federal Deposit Insurance Corporation	Arlington, VA
2024	<b>Star Award: Created a Power BI dashboard and reference manual, allowing non-technical users to access 100s of reports using financial data and ratios,</b> Federal Deposit Insurance Corporation	Arlington, VA
2023	<b>Star Award: Wrote PySpark code to assist with cloud migration efforts for FDIC's core financial data,</b> Federal Deposit Insurance Corporation	Arlington, VA
2022	<b>Star Award: Created tools in R and dashboards/visualizations in Power BI to access +1.5 million records financial data,</b> Federal Deposit Insurance Corporation	Arlington, VA
2022	<b>Star Award: Created and presented resources for accessing data for a non-technical audience,</b> Federal Deposit Insurance Corporation	Arlington, VA
2022	<b>USCIS-CIS Ombudsman Customer Service Working Group,</b> Citizenship and Immigration Services Ombudsman	Camp Spring, MD

## Conferences

### Data + AI Summit 2023 (Databricks)

San Francisco, CA

ATTENDEE

June 2023

- Did a training session on LLMs

## Education

### Johns Hopkins University

Baltimore, MD

MASTERS OF ARTS IN ECONOMICS

June 2014

- [Professor Joel Dean Undergraduate Teaching Award](#)

### The University of Chicago

Chicago, IL

BACHELOR OF SCIENCE IN ECONOMICS

June 2009