

Thomas J. Caputo

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Mr. Caputo has **ten years of experience leading machine learning projects** used to make critical business decisions, including **four years leading a team of high performing data scientists**. Among other technical skills, he is proficient in recommendation, experimental design, causal inference, and product analytics.

B.S. in Economics | 2012

George Mason University, Minor: Statistics, Fairfax, VA

M.A. Political Science | 2015

George Mason School of Public Policy, Arlington, VA

TECHNICAL SKILLSET

Domain Expertise: Recommender systems, market analytics and segmentation, product analytics, quantitative UX, customer LTV modeling, forecasting, experimentation

Languages, Tools, etc...: Python, Pytorch, AWS (Certified Developer), Elasticsearch, SQL, Tableau

PROFESSIONAL EXPERIENCE

Capital One | Mclean, VA

ML Lead for Digital CX Insights

Jan 2022 to Present

- **Manages a team of eight data scientists** responsible for recommendation engines and measurement tools to enhance marketing effectiveness and customer experience.
- **Owns CX ML strategy** and works with product managers, engineers, and designers to pitch projects to VP+
- Developed sequential AB testing feature deployed on Capital One's digital marketing platform. Tool reduced time-to-detect winning marketing campaigns by an average of 40%.
- Increased novelty and merchant coverage by 3x on Capital One's deal recommendation platform. Used hybrid collaborative/contextual filtering model.
- Deployed real-time **personalization** engine behind Capital One's "newsfeed" style mobile app experience.
- Developed **propensity models** used to better understand **customer acquisition, engagement, and retention patterns**.
- Leads **quantitative UX research R&D** that identifies insights from customer log and survey data. Generates white papers and models outputs that improve user experience, and task completion.
- Leads the recommender system community of practice at Capital One

Senior Manager – Data Science (Customer Behavior)

Jan 2019 to Jan 2022

- **Managed a team of four data scientists** responsible for running experiments and developing models to better understand customer behavior for Capital One's core credit products.
- Deployed customer lifetime value (LTV) models to explain how customers respond to changes in product strategy (e.g. credit limit, APR), which **resulted in an additional \$80 million** per year in revenue.
- Responsible for the **design and analysis of experiments** used to underwrite Capital One's core credit products.
- Discovered, pitched, and implemented changes in the experimentation program, which **increased net revenue by over \$100 million**.
- Collaborated with **cross-functional partners** (product, risk management, strategy) to **advise senior level (VP+) leaders** on strategies to increase customer engagement and revenue.
- Founded the experimentation community of practice at Capital One

Manager – Data Science (Strategy)

July 2016 to Jan 2019

- Deployed **forecasting models** used by engineering teams across the Capital One to optimize resource allocation
- Technical lead on anomaly detection project to pre-emptively identify customer impacting application failure – resulted in **90% reduction of false negatives over vendor product**. Model also performed root cause analysis resulting in faster time to resolution.

Veracity Forecasting and Analysis | Alexandria, VA

Data Scientist

Oct 2014 to July 2016

- Developed GLM and simulations tools used to forecast FA-18/F-35 mission readiness
- Built interactive dashboards to enable non-technical users to interact with inventory forecasting models

Grant Thornton LLP | *Alexandria, VA*

June 2013 to Oct 2024

Management Consultant

- Lead modeler of the Automated School Advisory System, a program that prioritizes the investigation of fraud risk
- Evaluated measurement systems to better detect, investigate, and eliminate non-compliance and fraud in over 9,000 educational institutions nationwide