

Elijah Tamarchenko

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Experience

Software Engineer – InterSystems Corporation

July 2023 – Present

SQL, Angular, ObjectScript, Golang

- Established internal best practices and standards for fullstack modern applications, used by the rest of the company
- Designed and created application templates used by internal developers and customers to simplify application development
- Developed an integrated AI code documentation system for internal use, which saved developers 40% of their time.
- Reduced loading time on several internal applications by over 70% through code optimization

Machine Learning Researcher – Williams College Computer Science

May 2022 – June 2023

Python

- Invented a set of statistical methods for the estimation of counterfactual outcome distributions, a novel approach which provides more density data regarding desired outcomes than current methods.
- Formulated a machine learning technique to compare and analyze counterfactual outcome densities into a single measure of density causal effect, which has an accuracy within 5% of the widely used Average Treatment Effect (ATE) and provides additional analytical power when the ATE fails.
- **Undergraduate Thesis:** Model Selection Techniques in Hidden Variable Graphs.

Data Engineering Intern – OneMarketData LLC

May 2021 – Sept 2021

Python, R, SQL, Git, AWS

- Created the data pipeline architecture for processing/migrating of 3rd party telemetry data into existing software system, used by 100+ daily users (Initial 4 Petabytes data, daily 1 Terabyte data).
- Designed and presented time-series forecasting models on large market datasets to business clients, decreasing client training time by 50%.
- Responsible for compiling all existing data processing procedures into End-To-End Guides for future data engineers, resulting in a 200% speedup of employee onboarding.

Psychology Research Assistant – Williams College Psychology Department

Sept 2019 – Aug 2020

Swift, iOS, XCode

- Proposed and created a study on the impact of gesture use and language on spatial working memory in children.
- Developed and launched iOS application from scratch to conduct psychological studies in 50% less time.
- Launched lab website in WordPress to expand outreach, increasing participant sign ups by 100%.

Education

Williams College – B.A. Statistics & Computer Science with Honors

Sep 2019 - June 2023

GPA: (3.85/4.0), CS/Stat GPA: (3.92/4.0), Dean's List, ASA representative, Cum Laude.

Relevant Coursework: Machine Learning (**Python**), Time Series Analysis (**R**), Causal Inference (**Python**), Generalized Linear Models (**R**), Deep Learning (**Tensorflow**), Statistical Inference (**R**), Comp. Biology (**Python**), Natural Language Processing (**Python**).

Projects

Research Abstract Classification (NLP) – *Tensorflow, PyTorch*

- Built a data pipeline and applied Natural Language Processing techniques on data extracted from arxiv to classify research papers based on their abstract, achieving an accuracy of 92%.
- Analyzed and compared the performance of an LSTM and a transformer (DistilBERT) model on the research papers, showing an advantage 6% in using finetuned pre-existing models.

Analysis of School Funding on Student Achievement – *Python, Causal Inference*

- A causal analysis using machine learning of school funding levels and student proficiency, which proves that decreases in school funding can account for about 18,000 students in MA being deemed not academically proficient.

Evolution Simulator – *Python*

- A program that simulates natural selection and evolution through the reproduction of simple dot organisms over many generations, allowing analysis of various organism behaviors.

Kafkaesque Text Generator – *Tensorflow, NLP*

- A finetuned version of a GPT-2 model which produces text that resembles the writings of the Bohemian existentialist writer Franz Kafka.

Activities & Interests

- *Ultimate Frisbee Social Chair* – Social chairperson and member of Williams Ultimate Frisbee Team.
- *Meditation Instructor* – Guided student meditation sessions with 5-15 people for the last 3 years.