

William Ventura

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EDUCATION

JOHNS HOPKINS UNIVERSITY

Baltimore, Maryland

Dual Masters of Science in Artificial Intelligence | Computer Science

June 2021 - May 2023

- Relevant Coursework: Machine Learning, Convex & Stochastic Optimization, Game Theory, Fuzzy Logic, Probabilistic Reasoning, Chaotic Systems, Monte Carlo Methods, Neural Networks, Natural Language Processing (NLP), Data Structures and Algorithms

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Blacksburg, VA

Bachelor of Science in Neuroscience

August 2017 - May 2020

- Relevant Coursework: Differential Equations, Inferential & Descriptive Statistics, Brain-Computer Interfaces, Linear Algebra

WORK EXPERIENCE

LOCKER

New York, NY

AI / ML Research Engineer Intern

January 2023 - April 2023

- Sourced and preprocessed **130K** samples from DeepFashion and Fashion-MNIST to train a **Deep Neural Network** model using **Python, Pandas, NumPy, and TensorFlow**
- Constructed a **computer vision** system harnessing **OpenCV** and **MediaPipe** to detect clothing articles in real-time video feeds and extract fine-grained attributes from **5k** subjects, achieving an accuracy rate of **91.84%**
- Employed **Shapley Feature Attribution** from **Game Theory** to gain insights into model's classification predictions

RISE NEW YORK

New York, NY

Data Scientist

November 2021 - January 2023

- Designed and implemented **ETL** processes in **Python** to extract data from various sources, including **APIs, databases, and flat files** to retrieve over **300K** of social media marketing, web traffic and consumer data to train various **AI and Machine Learning models**
- Constructed a **Random Forest** algorithm using historical data of **50K** previous consumers, accurately assessing likelihood of order completion, aiding in targeted marketing efforts, and increasing conversion rates by **5%**
- Engineered various **AI/ML** models for predictive analysis, including demand forecasting, assortment optimization, and marketing campaigns, enabling data-driven optimization strategies for supply chain and marketing operations decreasing costs by **17%**

IRRILIGHTS

Manassas, VA

Business Data Analyst

September 2020 - August 2021

- Automated data reporting, inventory management, and scheduling processes using **Python**, cutting down manual entry by **40%**
- Utilized **Tableau, Matplotlib, and Streamlit** to create interactive dashboards for real-time monitoring of key performance indicators
- Communicated with cross-functional teams to conduct market research and ad-hoc competitor and vendor analysis to support decision-making and helping secure **10** commercial projects from property management firms and federal buildings
- Assisted in budgeting and financial analysis by writing forecasting models that optimized resource allocation saving **\$175K** annually

PROJECTS

Shapley Based Risk Decomposition of Portfolios, JHU

January 2023 - May 2023

- Implemented **Game Theory** to devise a portfolio optimization algorithm in **Python**, decomposing **within-security** and **between-security risk** of **30 equities**
- Incorporated evolutionary **AI/ML models** and **Monte Carlo** methods to perform **10K** simulations of returns for a **3yr** period
- Attained an annualized rate of return of **29.48%** and **25.8%** for the top two best portfolios while diminishing **VaR** and **CVaR**

Detecting Malicious Smart Contracts on Blockchain Technology, JHU

August 2022 - December 2022

- Wrote a **REST API** to retrieve **15K** smart contracts for preprocessing and feature selection with **HDBSCAN, FCBF** and **SMOTE**
- Developed an ensemble majority voting algorithm in **Python** consisting of **3** classifiers, **XG-Boost, Random Forest, and Linear Discriminant Analysis**, to classify malicious smart contracts and prevent deployment onto blockchain
- Optimized **Machine Learning Classifiers** with **Particle Swarm Optimization** and achieved an accuracy of **98.31%**

SKILLS

- **Programming:** Python, MATLAB, HTML/CSS, Bash (Linux), Javascript, C++, SQL
- **Frameworks & Packages:** NumPy, Pandas, Matplotlib, TensorFlow, Sci-kit Learn, Docker, Git, Natural Language Toolkit (NLTK), OpenCV, React, CUDA, MongoDB, Amazon Web Services (AWS), GraphQL
- **Languages:** Spanish [Fluent], French [Conversational Proficiency]