

RYAN CLARK

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EDUCATION

Boston College, Morrissey College of Arts and Sciences

Chestnut Hill, MA

Bachelor of Science in Computer Science, Minor in Finance

August 2020 – May 2024

Relevant courses: Data Science – Computer Vision – Logic – Randomness – Natural Language Processing – Multivariable Calculus – Linear Algebra – Differential Equations – Financial Data Analytics – Corporate Finance – Investments

WORK EXPERIENCE

Data Scientist at HHMI/Harvard Medical School/Boston Children's Hospital

Boston, MA

June 2024 – Present

- Spearheaded large-scale statistical and machine learning analyses across 1B+ records to uncover actionable patterns and predict functional outcomes from complex datasets.
- Designed and deployed high-throughput data pipelines in Python, R, and Linux, enabling scalable, reproducible processing of terabyte-scale time-series and categorical data.
- Translated high-dimensional modeling results into compelling visualizations and insights, informing strategic decisions and contributing to peer-reviewed publications in high-impact journals.

Teaching Assistant at Boston College

Boston, MA

August 2022 – May 2024

- Supported undergraduate courses in Logic and Computation, Randomness & Computation, and Computer Vision, reinforcing foundational skills essential for data science and machine learning.
- Led 1:1 and group instruction for 100+ students per week, delivering real-time code reviews, algorithm walkthroughs, and problem-solving sessions in Python and NumPy/OpenCV.

Data & Systems Intern at Payette

Boston, MA

May 2023 – August 2023

- Automated hardware inventory tracking and reporting using Python and SQL Server, reducing manual overhead and improving accuracy.
- Streamlined internal troubleshooting protocols by creating diagnostic scripts and documentation, significantly reducing resolution times and operational downtime.

PROJECTS

FoxP3 Dimerization Discovery – Data-Driven Transcription Factor Binding Analysis

June 2024 – April 2025

- Led computational discovery of head-to-head FoxP3 dimerization binding, previously undetected in vivo, using a novel motif-pair detection pipeline and large-scale genomic integration.
- Developed custom data pipelines and statistical models to uncover new FoxP3-binding motifs and their co-occurrence with TnG microsatellite repeats, revealing regulatory logic across genomic contexts.
- Findings enabled a paradigm shift in FoxP3 biology and contributed to a first-author publication in a high-impact journal, demonstrating the power of data science to drive biological insight.

MarketMotif AI – ML-Driven Stock Market Volatility Pattern Detection Inspired by Genomics

May 2023 – August 2023

- Designed and deployed a custom data science pipeline inspired by genomic motif discovery to identify **volatility signatures** in financial time-series via peak-calling and pattern extraction..
- Leveraged machine learning to transform motif patterns into predictive features, yielding actionable insights on asset movement and regime changes. Implemented AWS technologies such as IAM, EC2, Route 53, DynamoDB, Lambda, SNS, and more.

SignalFrame – Python Library for High-Speed Signal Processing

May 2023 – August 2023

- Developed and released a high-performance Python library enabling real-time signal processing for large-scale datasets, featuring fast interval matching, signal normalization, and statistical testing.
- Engineered the architecture for speed, scalability, and ease of integration, achieving up to ~50× improvements in speed and up to ~2,000x memory usage over industry-standard tools; published to PyPI for open-source adoption and pipeline integration.

Certifications

AWS Machine Learning Specialty – AWS Solutions Architect Associate – AWS AI Practitioner – AWS Cloud Practitioner – Databases and SQL for Data Science with Python – Fundamentals of Visualization with Tableau

Languages

English (Native Proficiency) – Spanish (Intermediate Working Proficiency) – Swedish (Intermediate Working Proficiency)