Erik Pfeffer

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Education

University of Maryland College Park, MD

Bachelor of Science in Computer Science, Minor in Statistics *Aug. 2021 – May 2025*

GPA: 3.8/4.0

Relevant Coursework

Programming: Object-Oriented Programming, Advanced Data Structures & Algorithms, Database Design, Computer Network & Security, Data Science & Machine Learning, Compilers, Programming Language Technologies & Paradigms.

Maths/Stats: Applied Probability & Statistics, Sampling Theory, Calculus, Linear Algebra.

Experience

Data Analysis Intern May 2024 – Aug. 2024

John Hancock Investment Management *Boston, MA*

- Identified **16** new high-potential advisors and forecasted their future sales activity using a neural network model in PyTorch to enhance wholesaler/advisor pre-meeting intelligence with data-driven decisions.
- Automated the creation of smart lists and triggers for product marketing campaigns targeting key advisors, employing natural language processing techniques in Python to reduce manual effort by **several weeks**.
- Assisted in the development of advanced Power BI dashboards by writing efficient DAX expressions, transforming complex and big data from a MySQL Server database into insightful and actionable visualizations.

Undergraduate Research Assistant May 2024 – Present

University of Maryland *College Park, MD*

- Conducting research to explore the feasibility of using Haskell's QuickCheck for generating verifiably correct programs through property-based & unit testing concepts, contributing to the field of software engineering and formal verification.
- Developed a parser and evaluator for a miniature version of Dafny using Haskell, and integrated the Z3 SMT solver to facilitate the analysis and verification of program correctness.

Executive Board Secretary Dec. 2023 – Present

Sigma Phi Delta - Professional Computer Science & Engineering Fraternity *College Park, MD*

- Engineered and deployed an automated attendance system for the fraternity, efficiently managing and tracking data from **60+ weekly users**.
- As part of the leadership team, established and sustained a proactive line of communication with the fraternity's national office, providing timely and accurate reporting on chapter activities, membership updates, and compliance matters.

Software Developer Intern May 2023 – Aug. 2023

Voya Financial *Remote*

- Developed Python scripts to optimize financial close processes, resulting in a **12% reduction** in the time required to complete month-end close activities.
- Reduced manual data entry errors by implementing automated data validation checks and error-handling mechanisms.
- Implemented best practices for code maintainability, including modular design, thorough documentation, and version control using Git.

College of Computer, Mathematical, & Natural Sciences Ambassador Mar. 2022 – Present

University of Maryland *College Park, MD*

- Delivered engaging presentations to audiences of **100+ people**, showcasing the Computer Science program at the University of Maryland, and sharing personal anecdotes to inspire prospective students.
- Mentored incoming students, providing guidance on academic and extracurricular opportunities within the university.

Projects

Predicting Bitcoin Prices with Google Data | *Python, NumPy, Pandas, Scikit-learn, BeautifulSoup*

- Collected and merged Google Trends data with Bitcoin prices scraped from Yahoo! Finance using BeautifulSoup.
- Conducted analyses such as plotting, correlation studies, and hypothesis testing to reveal possible predictive relationships.
- Implemented Scikit-learn machine learning models to test Google Trends' predictive power on Bitcoin prices and trading volume. View Here

Full-Stack Restaurant Reviewer | *MongoDB, Express.js, React.js, Node.js, TailwindCSS, Next.js*

- Engineered a full-stack application that allows users to discover restaurants based on price or cuisine preferences as well as the ability to leave ratings and reviews on them.
- Created a RESTful API to manage restaurant data and user interactions. View Here

Technical Skills

Languages: HTML5/CSS3, JavaScript, TypeScript, Python, Java, C, OCaml, Haskell, SQL (Postgres/MySQL), R.
Frameworks/Developer Tools: Git, Bash, React.js, Node.js, Next.js, Linux, MongoDB.
Methodologies: Functional Programming, Property-Based Testing.