

Ty Misiorek

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EDUCATION

University of Virginia

Bachelor of Science, Computer Science; GPA: 3.88/4.00

Charlottesville, VA

Aug. 2022 – May 2026

- **Coursework:** Data Structures and Algorithms, Computer Architecture, Software Development, Artificial Intelligence, Machine Learning, Computer Vision, Linear Algebra, Probability, Statistics with R

EXPERIENCE

Undergraduate Research Assistant

UVA School of Data Science

September 2023 – Present

Charlottesville, VA

- Develop and analyze a dataset of over 1,000,000 rows of university administrator records spanning 1999-2018 from 700+ U.S. universities, uncovering trends and issues related to boards of directors and their impact on governance
- Engineer a data processing pipeline to digitize and structure thousands of pages of university administration records, leveraging OpenCV for layout detection, PyTesseract to extract text from scanned documents, and the OpenAI API for data cleaning and pattern recognition, enabling the creation of a structured dataset
- Implement data cleaning and NLP techniques to resolve ambiguities within the dataset, ensuring accurate and reliable data in CSV format
- Create network visualizations and utilized advanced statistical techniques, including Gephi networks to analyze board interlocks, CPF visualizations, ROC/AUC curves, panel data analysis, and regression to derive actionable insights
- Automate data retrieval by extracting links and information from IRS 990 forms using BeautifulSoup

PROJECTS

theCourseForum | *Django, HTML/CSS, PostgreSQL, DigitalOcean*

September 2023 – Present

- Collaborate with the development team on the university's largest course review platform, utilized by 85% of the student body
- Implement course pagination on the platform, significantly improving load times and enhancing user experience
- Utilize Docker for containerization to streamline deployment processes and improve scalability and reliability of full-stack web applications

ResearchHub | *Django, Bootstrap, AWS S3, Google OAuth*

September 2024 – December 2024

- Directed a team of 5 developers through the design, development, and deployment of a research project management app for the UVA community.
- Implemented data management using AWS S3 and deployed the application on Heroku, reducing hosting costs
- Enhanced user accessibility by incorporating Google OAuth for secure login
- Designed and implemented team collaboration features, including calendar-based availability management and roadmap planning, allowing dynamic event creation, editing, and viewing with role-based permissions

Songscribe | *Python, D3.js, HTML/CSS, Heroku*

June 2024 – September 2024

- Designed and deployed a full-stack web application using Flask and D3.js, enabling users to explore an interactive 3D visualization of Spotify's collaboration network with artist nodes and edge connections representing shared songs
- Implemented data processing techniques for network generation, including community detection algorithms, node clustering, and elevation-based terrain visualization, enhancing functional user experience
- Optimized performance by leveraging ForceGraph3D to handle large-scale graph data efficiently
- Deployed the application on Heroku, incorporating Git for version control, environment management, and custom domain integration

TECHNICAL SKILLS

Languages: Python, Java, C, JavaScript, SQL, R

Frameworks: Django, D3.js, Flask, JUnit

Developer Tools: Git, Docker, VSCode, PyCharm, IntelliJ, Heroku, Cloudflare, JupyterLab