MICHAEL MITSCH

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PROFESSIONAL EXPERIENCE

Progressive Insurance

Data Engineer / Senior Data Engineer — **July 2023 – Jan 2025, Jan 2025 – Present**

- **Orchestration & Automation:** Introduced Prefect to automate business-critical monthly data pipelines, eliminating manual operational overhead and revamping internal API routes to simplify template workflows for data analysts.
- **ML Infrastructure & Deployment:** Designed production-ready modeling and application containers (Docker) alongside customized AMIs to standardize deployment and simplify core monthly batch jobs across repositories.
- **Feature Engineering & Core Tooling:** Reworked and optimized weather feature data retrieval into a centralized asset accessible to cross-functional teams, while authoring high-performance utility function enhancements across shared codebases.

Associate App Developer / App Developer Intern — **Summer 2021, June 2022 – July 2023**

- **Full-Stack Data Solutions:** Developed and optimized internal applications using a SQL database architecture, C# codebase, and XAML user interfaces.
- **System Decoupling:** Designed and implemented an ASP.NET Web API to decouple monolithic legacy applications, enhancing modularity and data accessibility.
- **Agile Collaboration:** Partnered directly with business stakeholders to refine technical requirements, translate business logic into application features, and continuously deliver code through robust CI/CD pipelines.

RESEARCH & ACADEMIC LEADERSHIP

Indiana University — Luddy School of Informatics, Computing, and Engineering

Undergraduate Instructor & Tutor — **August 2019 – Fall 2022**

- **Technical Mentorship:** Selected to lead lab discussions, hold technical office hours, and mentor undergraduate students in Python, C programming, digital logic, and computing optimization.
- **Software Development:** Developed custom Python simulations used for laboratory coursework and engineered an automated grading system to evaluate student programming assignments.

Student Researcher (Machine Learning) — **January 2020 – June 2020**

- Built and evaluated a K-Medoids clustering model using rigorous feature selection and statistical refinement to programmatically detect malicious bot behavior on social media platforms.

EDUCATION

Indiana University — Bloomington, IN — **Graduation: May 2022**

Bachelor of Science in Intelligent Systems Engineering

Specialization: Computer Engineering / Cyber Physical Systems • **Minors:** Computer Science and Mathematics

Metrics & Honors: Cumulative GPA: 3.963 • Dean's List Recipient (All Semesters) • Member of the Hutton Honors College

CORE COMPETENCIES

Coding Languages:	OOP (Python, Java, C#, C++), SQL, C
Data & Cloud Infrastructure:	Snowflake, AWS, Docker, Prefect Orchestration, Azure
Data Science:	Machine Learning, Predictive Modeling, Feature Engineering, Statistics