

JOE BOWEN

Chapel Hill, NC — Open to Relocation

☎ 336-926-9824 ✉ joe.bowen13@gmail.com  [linkedin.com/in/michael-j-bowen](https://www.linkedin.com/in/michael-j-bowen)  github.com/joebowen

Summary

Data Engineer with experience in machine learning, LLM experimentation, and operations analytics. Proven ability to turn complex datasets into actionable insights through Python, SQL, and Power BI. Experienced in automation, computer vision, and cross-functional collaboration within manufacturing environments.

Technical Skills

Languages: Python, SQL, R, Java, JavaScript, HTML/CSS, \LaTeX , MATLAB

Frameworks: PyTorch, Node.js, Ultralytics YOLO, ONNX, REST APIs

Dev Tools: Databricks, PostgreSQL, Git, GitLab, Docker, VS Code, Anaconda

Experience

Corning Inc.

Summer 2025

Digital Transformation Intern

Hickory, NC

- Engineered and deployed computer vision models using Ultralytics YOLO on Databricks for automated quality-control inspection, curating datasets and managing version control via GitLab to streamline development workflows. Reduced Beckhoff PLC cycle time by ~ 20 ms and improved model confidence scores by $\sim 60\%$ through optimization of detection pipelines and validation testing.
- Designed and implemented Ignition (SCADA) and Power BI dashboards integrating 2,500+ machine tags and datasets exceeding 1.6M rows, enabling real-time engineering insights and process monitoring.
- Led Extract, Transform, Visualize project, extracting data from Beckhoff PLCs and thermal imaging systems, transforming via Python in an RPA environment, and delivering production-ready Power BI reports to optimize manufacturing recipe tuning.

Corning Inc.

Summer 2024

Operations Intern

Winston-Salem, NC

- Automated aggregation of 50,000+ SQL data cells into dynamic Power BI dashboards using Power Query, reducing meeting preparation time by up to 50% and forecasting time from 30 to 10 minutes.
- Developed automated data workflows using Microsoft Office and Power Automate to support long-term integration of new manufacturing processes into enterprise systems.

Projects

Personal Website | *JavaScript, Node.js, REST APIs, PostgreSQL*

Summer 2026

- Built and deployed a personal portfolio website with dynamic project content, interactive navigation, and a custom GPT-wrapper chatbot for conversational access to resume, experience, and project information.
- Developed a Node.js serverless API integrating IP geolocation with Supabase/PostgreSQL to aggregate approximate visitor locations while storing hashed IP identifiers and managing secrets via environment variables.

Uncertainty-Aware LLM Training | *Python, PyTorch, GPT-2, Google Colab*

Fall 2025

- Retrained a toy GPT-2 language model on domain-specific medical QA data to evaluate how alternative loss functions affect uncertainty calibration and out-of-domain behavior.
- Implemented and compared standard cross-entropy, Linearly Adaptive Cross-Entropy (LACE), and Generalized Kullback–Leibler (GKL) objectives, averaging results across 3 trials.
- Used Monte Carlo Dropout at inference time to estimate epistemic uncertainty on unseen out-of-domain prompts, showing LACE increased OOD uncertainty relative to standard cross-entropy while GKL led to over-uncertainty.

ASA DataFest Finalist | *R, Python, Data Wrangling, Statistical Analysis*

April 2025

- Collaborated on a four-person team to clean and analyze $\sim 200,000$ leasing records, identifying market trends to support tenant decision-making.
- Presented findings to 150+ students and industry professionals, translating complex results into actionable recommendations.

Education

North Carolina State University

Expected 2028

MR - Statistics (Online)

Raleigh, NC

University of North Carolina at Chapel Hill

B.S. - Statistics

Chapel Hill, NC