

JOE BOWEN

Chapel Hill, NC — Open to Relocation

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Summary

Data Engineer with experience in machine learning, GPT-Development, 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, R, SQL, Java, HTML, CSS, JavaScript, \LaTeX , MATLAB

Dev Tools: Databricks, Docker, Git, GitLab, VS Code, Anaconda, Google Colab, GPT

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.
- Applied DMAIC methodology to standardize plant-wide material storage and disposal processes, improving operational consistency and compliance.
- Developed automated data workflows using Microsoft Office and Power Automate to support long-term integration of new manufacturing processes into enterprise systems.

CVS Health

Sep 2024 – Mar 2026

Shift Supervisor

Chapel Hill, NC

- Supervise daily operations for a high-volume retail store, overseeing inventory, cash handling, and regulatory compliance while leading team members to maintain operational efficiency and resolve real-time issues under pressure.

Projects

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

Master's Degree - Computer Science

Raleigh, NC

University of North Carolina at Chapel Hill

B.S. - Statistics and Analytics

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