Bill Zhang

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EDUCATION

University of Illinois Urbana-Champaign (UIUC) *May. 2026*
B.S. in Computer Science and Statistics *GPA: 3.94/4.0*
Coursework: Algorithms, Systems Programming, Networks, Database Systems, Computer Architecture, Data Structures, Programming Languages & Compilers, Competitive Coding, Statistical Learning, Data Science, Statistics & Probability II

WORK EXPERIENCE

Meta
Incoming Software Engineer Intern May 2025 - Aug 2025
Capital One
Machine Learning Intern - Tech Incubator, IFX APEX Recommendation Systems Team Sep 2024 - March 2025
- Engineered a **35M** row multimodal embedding dataset via OpenAI CLIP to enhance accuracy of a single-modal transformer model
- Drove a **25x speedup** in image embedding generation through multi-threading a collection script that pulls from AWS S3 Buckets
- Achieved a **98%** speedup in dataset building through parallelizing a Snowflake–Pandas data pipeline with Python Dask
- Clustered **3000+** images to uncover insights in data, optimizing K-Means through tuning UMAP and Spectral Embeddings
- Elevated accuracy by **80%** from baseline for random forest & deep learning models through using the new embedding dataset

UIUC CS 341: Systems Programming
Undergraduate Teaching Assistant Jan 2025 – Present
- Developed weekly systems assignment and pre-labs in Prairielearn using **C** and provided fixes to existing ones
- Assisted **300+** students on assignments through the course online forum and gathered feedback to improve assignments

CME Group
Software Engineer Intern - Enterprise Credit Control Team May 2024 – Aug 2024
- Revamped fault-tolerant system using **Kafka and Zookeeper** for asynchronous actions, reducing state-saving latency by **99.6%**
- Refactored code to eliminate external dependencies on Redis and Consul, enhancing cloud compatibility for easier migration
- Migrated trading credit-control Java SpringBoot application to **Google Cloud**, enabling parallel instances for auto-scaling
- Resolved a critical production issue by swapping to Kafka, significantly improving system stability and preventing further crashes

Milliman
Software Developer Intern - M-PIRe Platform Team May 2023 – Aug 2023
- Modernized **20** legacy C# automated testing suites, enhancing forecast accuracy for ML models and accelerating development
- Validated cashflows of over **50,000 data points**, optimizing the code with parallelization to reduce runtime by **50%**
- Built **150+** test sets through SQL queries to Azure Data Studio and deserializing JSON, ensuring accurate model output
- Engineered API test functions, streamlining POSTs/GETs data, validating outputs and reducing testing time by **20%**

UIUC CS 124: Introduction to Computer Science Honors
Project Manager / Course Assistant Jan 2023 – Jan 2025
- Lead software teams of 4+ students every semester in **Agile projects** by providing mentoring and expertise in **Python, Flask, React, Machine Learning, and Data Science** through conducting weekly workshops and standups

PROJECTS

[Reddit Misinformation Extractor](#) | *Python, Sci-kit Learn, Pandas*
- Deployed a **Sci-kit Learn** model to detect Reddit COVID-misinformation, used for **data analysis** of misinformation spread online
- Leveraged **bag-of-words and TFIDF** to train a **Support Vector Machine Classifier**, achieving **82%** accuracy
- Developed a **Python script** using the **Reddit API** to extract data from subreddits, amassing a dataset of **10,000+** entries

[Foliage](#) | *Python, Flask, Javascript, CSS, HTML*
- Collaborated in a team to develop a **web-app developer tool** that visualizes version control through an interactable tree
- Developed the **flask back-end** using **dynamic programming** for optimization, implementing a **git-like** version control
- Designed front-end with **HTML**, **Bootstrap**, and **CSS**, developing **javascript** functions to commit, branch, restore user commits

[Computer Science Principles IDE and Interpreter](#) | *Java, Java Swing, Java AWT*
- Crafted a **Java IDE** for a custom coding language, enabling code file management and execution for educational use
- Engineered a **code interpreter** that supports basic programming functions and **integrated error messaging**

SKILLS & INTERESTS

Languages: Python, C++, Java, C, C#, SQL, Kotlin, HTML/CSS, Javascript, R, Verilog, MIPS Assembly

Technologies: Git, Github, Docker, .NET Core, Visual Studio, MongoDB, Flask, Pandas, MatplotLib, Numpy, Sci-kit Learn, TailwindCSS, Bootstrap, Kafka, Zookeeper, Springboot, Redis, Pytorch, Dask

Concepts: Machine Learning, Distributed Systems, Systems, Backend, Full Stack Development, Data Science, Agile Methodologies