Braden Lockwood

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Experience

- **Software Engineer**
  Kiewit *January 2023 - Present*
  - Architected and productionized Kiewit's safety app for 2,000 daily users using React, TypeScript, Python, and Django, managing both frontend UI and backend API's.
  - Built and deployed Flask API's to house our machine learning models.
  - Managed ETLs for our data warehouses using SQL Server, performing normalization and optimization of tables and queries when necessary.
  - Pioneered an automated data scraping initiative using Selenium and Pandas, collecting over 9,000 engineering contracts for a key transportation cost prediction model.
  - Effectively created and managed CI/CD pipelines using Azure DevOps for robust software deployment.
  - Engineered a Numpy Bayesian Regression model, predicting equipment costs with 75% accuracy and providing uncertainty estimates, enhancing strategic bidding and contract wins across U.S. transportation departments.
  - Initiated the adoption of E2E and Integration testing strategies using playwright, enhancing software reliability and testing efficiency in the department.
- **Software Engineer Intern**
  Kiewit *May 2022 - August 2022*
  - Improved project management at Kiewit by developing an Angular-based web application, simplifying real-time tracking and storage of project requirements.
  - Developed secure C# .Net APIs facilitating the storage and retrieval of project-specific images and sensitive data, enhancing the efficiency and security of data management.
  - Established SQL databases using Entity Framework Core and database migrations for process simplification.
  - Collaborated in an Agile software development team to produce efficient code.

Projects

- **Twitter**
  An Implementation of Twitter using React and Go
  - Engineered the front-end architecture using React and TypeScript, employing Tanstack Query for effective server state management.
  - Constructed the backend with Go, incorporating GORM for efficient object-relational mapping and Gin to establish a robust RESTful API.
- **Stython**
  A Compiler for Python
  - Implemented a Hand-Coded Scanner using C++
  - Designed the language using a series of regular expressions.
- **NanoGrad**
  A Smaller Implementation of Pytorch
  - Initiated and developed a custom machine learning framework to deepen understanding of PyTorch internals.
  - Employed Python for user interaction with the framework, emulating PyTorch's easy-to-use interface.
  - Utilized modern C++ for the backend, optimizing matrix multiplication operations and memory management with smart pointers.
  - Bridged Python frontend with C++ backend using ctypes library, and managed compilation with CMake, ensuring smooth and efficient performance.

Education

- **University of Kansas** *August 2018 - December 2022*
  B.S. Computer Science

Skills Summary

- **Languages** TypeScript, Python, Go, SQL, C#, C++
- **Frameworks** React, Tanstack Query, Django, Numpy
- **Tools** Git, SQL Server, Linux, Azure DevOps, Azure Pipelines