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 front-end technology such as React, TypeScript, HTML, and CSS.
    - Developed the backend web REST API with Django using Python, focusing on object-oriented programming.
    - Managed our SQL Server relational database, performing normalization and optimization of tables and queries when necessary.
    - Effectively created and managed cloud computing CI/CD pipelines using Azure DevOps for robust software deployment.
    - Initiated the adoption of E2E, Integration, and unit testing strategies using playwright, enhancing software reliability and testing efficiency in the department.
    - Implemented authentication and authorization using JSON Web Tokens (JWT), Token-Based Authentication, and Azure Active Directory (Azure AD) for secure client-side and server-side applications.
    - Lead technical discussions for the adoption of new technology and software methodologies.

- **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