Brett Wiseman

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EDUCATION

University of Notre Dame, College of Engineering — **Notre Dame, IN**
Bachelor of Computer Science in Engineering — **May 2023**
Honors: College of Engineering Dean's List, Blackhawk Alumni Scholarship

PROFESSIONAL EXPERIENCE

Visa Inc. — **Austin, TX**
Software Engineer - *Visa Integrated Payments (VIP)* — **July 2023 - Present**

- Provide Online support and design code for VisaNet Authorization platform running on IBM z/TPF systems
- Designed and built a React/Flask Chatbot for VIP Online support using previous email ticket responses, leveraging GPT and embeddings stored in a Redis vector database
- Resolved client tickets by running transactions in test environments, debugging C++/ASM code, quickly mastering VISA's payment ecosystem to understand payment flows as well as providing on-call support to diagnose and resolve server issues, ensuring operational systems and minimizing client downtime
- Completed an 8-week z/TPF Assembler and C/C++ certification, showing a deep understanding of TPF systems and C/Assembler coding practices

Visa Inc. — **Austin, TX**
Software Engineer Intern - *Payment Product Development (PPD)* — **May, June, and July 2022**

- Successfully demonstrated strong problem-solving skills in a hybrid work environment by optimizing a JSON/XML to UMF parser using C++ within the IBM Toolkit to process and log critical transactional data downstream efficiently
- Performed comprehensive testing using the VM3 terminal interface to initialize test systems, load compiled project code, and conduct thorough regression tests on TPF systems

University of Notre Dame — **Notre Dame, IN**
Research Intern - *Cooperative Computing Lab (CCL)* — **Fall 2021 - Fall 2022**

- Developed High-Level Python abstractions for parallel computing and distributed systems to align local and distributed computation results
- Contributed to the widely-used Work Queue software, benefiting thousands of users and collaborating with institutions including the University of Notre Dame, the University of Arizona, and the University of Wisconsin

PROJECTS

GREG - Distributed Chess Application — **Spring 2023**

- Investigated different types of distributed systems architectures and implemented them in various assignments, followed by measuring/testing the system to compare against each other
- Engineered a distributed chess application utilizing a Client/Server to Manager/Worker architecture, enabling clients to connect to a server for distributing heavy workloads among available workers and ensuring system robustness under diverse conditions
- Conducted performance testing under various workloads, and effectively communicated the results through presentations and detailed technical documentation

B-minor Compiler — **Fall 2022**

- Constructed the five stages of a compiler—scanner, parser, type checker, optimization, and code generator—leveraging the abstract theory of automata and requiring expert understanding of pointers and data structures to build an AST to output final x86 source code then
- Sharpened robust software development skills by implementing stages incrementally and conducting rigorous testing after each phase

Multi-Player Competitive Worldle — **Spring 2022**

- Wrote server and client applications for a multiplayer Wordle game, enabling the server to manage game options and clients to participate in a round and point-based guessing game
- Utilized thread and socket programming to facilitate communication between games and clients, with packets defined in JSON format to allow compatibility with custom implementations
- Implemented comprehensive error-checking mechanisms to ensure message validity, prevent host crashes from unexpected behavior, and maintain fair gameplay

SKILLS

Programming Languages: Proficient: C, C++, Python, Assembly/X86 Basic: Javascript, Java, Matlab, HTML/CSS
Tools: Linux, IBM Toolkit, Git, Vim, WireShark, Redis, Bash/sh, zTPF
Frameworks: Flask, Django, React