

## WORK EXPERIENCE

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### **UW-Madison College of Engineering**

*Computer Aided Engineering Consultant*

Madison, WI

Sep 2021 – Aug 2025

- Proactively resolved computing issues, supporting over 6,000 engineering students, faculty, and staff.
- Maintained and upgraded hardware within computer labs.
- Mentored and supported consultant trainees semesterly, ensuring seamless onboarding.

### **Goodwill Industries**

*Cashier and Donations Assistant*

Madison, WI

Oct 2019 – Mar 2020

- Independently helped customers and generated 15-20% roundups for donations on purchases.
- Received and sorted donations efficiently with a team to manage merchandise flow.

## PROJECTS

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### ● **Unix-based Shell (C, Linux):**

- Implemented a Unix shell that parses user input and executes commands, supporting interactive and batch modes, process creation and management, pipelines, I/O redirection, environmental variable expansion, and history.
- Utilizes standard Linux system calls to implement built-in functions and hierarchical PATH lookup for external commands; reassigns file descriptors to route standard streams across chained commands.

### ● **MiniSpark (C, Linux):**

- Developed a simplified version of Apache Spark that executes transformation pipelines over partitioned datasets with parallel execution across multiple worker threads, supporting MapReduce-style processing on a single node.
- Designed a thread pool-based execution model using a global work queue, locks, and condition variables to schedule partition-level tasks as dependencies are satisfied; recursively traversed a DAG of transformations to materialize RDDs and ensure correct data flow between stages.

### ● **Concurrent gRPC Model Inference Server (Python, gRPC, Protobuf, PyTorch, Docker):**

- Implemented a PyTorch model inference server deployed in a Docker container using gRPC, handling remote prediction requests with support for concurrent clients, batched inputs, model updates, and cached results.
- Defined service interface with Protocol Buffers; implemented thread-safe gRPC handlers using a fixed-size LRU cache with cache invalidation on model updates; used explicit locking to protect shared model and cache state; served requests via a thread pool, with clients issuing concurrent calls and logging for monitoring.

## EDUCATION

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### **University of Wisconsin - Madison**

*B.S., Computer Science, Data Science*

Madison, WI

Sep 2021 – May 2025

## INVOLVEMENT

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### **Chi Sigma Tau National Fraternity, Inc.**

*Vice President Internal, Integrated Marketing Communications*

- Organized fundraising and volunteering events to raise over \$5,000 for the Alzheimer's Association.
- Planned and coordinated chapter events, chapter trips, and various cultural events.
- Led creative direction for social media with impactful visuals that grew engagement and drove recruitment.

## SKILLS

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**Languages:** Python, Java, C, SQL

**Libraries:** PyTorch, PySpark, React