

# PATRICK KAMBA

Portfolio Website: <https://pat0kamba.github.io/myPortfolio/>  
952-292-9731 | Brookings, SD 57006 | [patrick.kamba@jacks.sdstate.edu](mailto:patrick.kamba@jacks.sdstate.edu)

## EDUCATION

### South Dakota State University – Brookings

Bachelor of Science in Computer Science, Senior  
Dean's List: Spring 2024

Graduation: May 2025

**Relevant Courses:** Systems Programming, Data Structure and Algorithm, Object Oriented Programming, Foundations of Software Engineering, Database Management Systems, Software Project Management and Testing, Computer Organization and Architecture, Operating Systems, Senior Design

## TECHNICAL SKILLS

**Programming Languages:** C++ (Advanced), Python (Advanced), JavaScript (Advanced), C# (Advanced).

**Technologies:** SQL, Docker, System Verilog, DOSBox, Html, CSS, .Net, React, Redux, Node JS, MongoDB, Git.

**Certification:** 2023 Web Development Bootcamp Certification.

## WORK EXPERIENCE

### Student IT Programmer

August 2022 – April 2023

- Collaborated effectively within a team of programmers and supervisors to create, update, and maintain 50+ forms and documentations in alignment with diverse departmental requirements using FormSite and JavaScript.
- Effectively managed data flow between web applications and the University's database using MySQL, ensuring transmission and retrieval of crucial information.
- Executed the development of 2+ multifaceted web projects using C#, ASP.NET, and .NET.
- Generated an interactive student bookstore portal using C# and ASP.NET, resulting in a 5% reduction in processing time and an increase in student satisfaction.

### Academic Resources Peer Tutor

June 2018 – May 2019

- Provided one-on-one tutoring to an average of 7 students daily in courses such as calculus, physics, and chemistry, leading to an average grade increase among tutees.
- Developed and delivered customized study guides based on individual needs for disabled students, resulting in about 25% reduction in test anxiety and improved confidence level.
- Facilitated small group study sessions covering complex concepts, promoting teamwork and problem-solving.

## PROJECTS

### 1. Full-Stack Social Media Web Application

**Summary:** Developed a full-featured, multi-user social media application using the MERN stack (MongoDB, Express.js, React.js, and Node.js), integrating social interactions, and multimedia content handling:

- Utilized React Components and State management to create a dynamic and interactive user interface.
- Implemented user profiles with profile pictures, follow/unfollow functionality, and the ability to post content with likes and comments.
- Built a secure backend API using JSON WEB TOKEN for user authentication and authorization.

### 2. Full-Stack React E-commerce App

**Summary:** Constructed a responsive single-page application replicating the functionality and design of Mango, a popular e-commerce website.

- Enhanced a responsive and mobile-friendly interface cloning Mango's design aesthetics using React.js.
- Improved the optimized state management with Redux Toolkit to facilitate scalable data handling across complex components.
- Architected a secure and scalable REST API for data exchange.

### 3. Vending Machine Design

**Summary:** Designed and built a vending machine system that takes a fixed amount of money and dispense a rotten tomato; the system is mounted in System Verilog and demonstrated using a DE10-Lite board:

- The vending machine has a single coin slot that accepts farthings (0.25d), half pennies (0.5d), and pennies (1d).
- the machine dispenses the correct change for amounts greater than 1.25d using farthings and half penny coins.
- Applied Moore-style Finite State Machine to manage state transitions based on user input.
- Utilized an encoder combined with a D Flip Flop to track current state and user input accurately.

## ACTIVITIES

- Association for Computing Machinery (ACM): Member
- Hackathon Iowa State University (Fall 2023, Spring 2024): Participant
- Finished 3<sup>rd</sup> at HackSoDak 2024 (Spring 2024 SDSU Hackathon)
- **GitHub Repositories:** <https://github.com/pat0kamba?tab=repositories>