# Jeremy Schur

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## EDUCATION

**University of Colorado Boulder** 　　　　　　　　　　　　　　　　August 2021 - May 2025
- Bachelor's of Science in Computer Science.
- Major GPA: 4.0
- Relevant Coursework: Starting Computing, Data Structures, Computer Systems, Software Development Methods and Tools, Algorithms, Principles of Programming Languages, Design and Analysis of Database Systems, Introduction to Artificial Intelligence, Introduction to Robotics, Introduction to Data Science and Probability, Fundamentals of Human Computer Interaction, and Computing Ethics and Society.

## ACADEMIC PROJECTS

**Ecommerce Website** | *HTML/CSS/Javascript, Node.js, EJS, PostgreSQL, Docker, Microsoft Azure*
- Developed a full stack web application where users can buy and sell clothing/shoes
- Implemented EJS to dynamically render content for the user
- Employed Node.js with an Express App to build a clean and quick backend infrastructure.
- Implemented a PostgreSQL database to store and retrieve product and user data
- Integrated user authentication features allowing users to log in and out of their account securely
- Packaged application using Docker Image and deployed with Azure
- Utilized GitHub to track changes and always maintain a MVP

**Database Projects** | *MySQL, mongoDB, Apache Cassandra*
- Implemented relational, star-schema, and snowflake database schema using different DBMS
- Added and applied indexes to improve performance in large databases
- Converted relational databases into NoSQL databases

**Systems Projects** | *C, GDB, Valgrind, OpenMP*
- Applied input validation attacks, code injection attacks, and ROP attacks against applications to learn different security vulnerabilities when writing system code
- Optimized memory intensive image processing code using techniques such as loop unrolling, strength reduction, in-lining, and multi-threading with OpenMP
- Developed a small Unix shell supporting job control
- Developed a dynamic storage allocator for C programs creating new malloc, free, and realloc routines

**Database Implementation** | *C++, Valgrind*
- Developed a movie database system from scratch using C++
- Implemented a skiplist and hashtable to store director and movie information for fast retrieval
- Demonstrated a proficiency in memory management using Valgrind to ensure of no memory leaks
- Implemented effective error handling to manage unexpected user inputs

**Redesign of CU Boulder Class Search Page** | *Surveys, Interviews, Figma Prototype, Usability Tests*
- Conducted surveys and interviews of CU Boulder students to find inconveniences or problems with the current class search page
- Created a Figma Prototype that fixed some of the major inconveniences/problems students were facing
- Employed usability tests on the Figma Prototype to ensure our design was easy to use and understand as well as made sure it addressed the inconveniences/problems students had

## ADDITIONAL INFORMATION

**Technical Skills**: C/C++, Java, Python, HTML/CSS/JavaScript, PostgreSQL, MySQL, mongoDB, Apache Cassandra, Scala, LaTeX, Node.js, EJS, React, Pandas, Numpy
**Developer Tools**: VS Code, Intellij IDEA, Visual Studio, GitHub, GDB, Valgrind, Docker, MySQLWorkbench, Postman, Azure, JupyterLab, CMake, Figma