

# Lian Zhu

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## EDUCATION

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### Portland State University

Portland, OR

*Bachelor of Science in Computer Science, Minor in Mathematics*

*Sep. 2023 - June 2027*

- Relevant Coursework: Data Structures & Algorithms, Database Management Systems, Algorithmic Thinking, System Programming & Architecture, Calculus III, Linear Algebra, Discrete Structures

## PROJECTS

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### Academic Data Visualization Tool | *JavaScript, React, SQLite3*

December 2024 – May 2025

- Worked in a team of 4 to develop a full-stack grade visualization tool with React, JavaScript, and SQLite3, simulating university data for course and instructor insights
- Reduced redundant SQL queries by 40% through optimized indexing and caching, improving data retrieval speed and responsiveness
- Designed an interactive, filterable dashboard with real-time visualizations for grade trends and teaching history

### Roblox Group Manager Service | *Python, Discord.py, Pillow*

June 2024 – Dec. 2024

- Collaborated in a 3-person team to develop and maintain a management system for a 300+ member Roblox group
- Designed and deployed a serverless API on DigitalOcean, improving backend scalability and reducing overhead
- Built a Discord bot for real-time group moderation and automation, enhancing user experience and efficiency
- Improved member engagement with dynamic data visualizations and automated reporting using custom image rendering

### Barbell Path Tracker | *Python, OpenCV, NumPy*

Feb. 2024 – June 2024

- Led full Software Development Life Cycle phases—planning, design, implementation, and testing on a computer vision project for barbell path analysis
- Built a Python script using OpenCV to track barbell movement and compute deviation from an ideal vertical path
- Presented the project and development process at the Hillsboro Airshow to a broad, non-technical audience

### CRUD Application | *C++*

Mar. 2023 – July 2023

- Developed a command-line CRUD application in C++ featuring task creation, deletion, and updates via a custom linked list implementation
- Applied core data structure principles to enable efficient task management and dynamic memory handling
- Designed a clean, user-friendly CLI interface to enhance usability and navigation for non-technical users

## EXPERIENCE

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### Front Desk Member

Mar. 2023 – Present

*City of Hillsboro Shute Park Aquatic & Recreation Center*

*Hillsboro, OR*

- Performed administrative tasks and data entry using ActiveNet, a cloud-based event management system
- Managed memberships, enrollments, and waitlists for high-demand classes and activities with accuracy
- Handled new patron registrations and account inquiries, ensuring excellent customer service
- Collaborated with diverse coworkers and patrons to maintain smooth operations in a fast-paced environment

## TECHNICAL SKILLS

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**Languages:** Python, C/C++, Java, JavaScript, SQL, HTML/CSS

**Frameworks & Libraries:** React, Node.js, NumPy, Pillow

**Developer Tools:** Git, Linux, Vim, VS Code

**Databases:** SQLite3