

Bipras Shrestha

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Education

CSU, Fullerton

Jan 2026 - Present

Computer Science, B.S.

- **Coursework:** Computer Architecture & Assembly, Compilers & Languages, Operating Systems Concepts

Cypress College

Aug. 2023 - Dec. 2025

Computer Science, A.S.

Projects

Mittens | C++, Riot API, SQLite, CMake

github.com/b-stha/Mittens [🔗](#)

- Developed a C++ Discord bot that monitors Teamfight Tactics players through Riot's API and publishes automated post-game statistics and board summaries.
- Built a thread-safe worker queue and asynchronous API workflow to serialize player processing, suppress duplicate jobs, and recover cleanly from failed requests.
- Added SQLite persistence to restore tracked players, queue selections, Discord channels, and processed-match state across application restarts.
- Hardened the long-running service with environment-based secret management, structured HTTP/JSON error handling, graceful shutdown, and CTest regression coverage.

mksh | C++, Unix, POSIX

github.com/b-stha/mksh [🔗](#)

- Built a Unix-like command-line shell in C++ to apply operating systems concepts such as process creation, command execution, and file descriptor management.
- Implemented a custom lexer and parser to tokenize shell syntax, handle quoted arguments, and construct structured commands for execution.
- Implemented built-in commands such as cd, pwd, exit, and help to support core shell behavior without spawning external processes.
- Implemented external command execution using fork, execvp, and waitpid for process creation, program replacement, and child synchronization.
- Designed the shell around modular components for lexing, parsing, built-in command handling, and execution.

TypeSuggest | C++, heaps

- Developed a typo-suggestion algorithm that ranks candidate words using keyboard-coordinate distance.
- Converted keystrokes into spatial coordinates to calculate similarity between typed and intended words.
- Implemented a custom binary min-heap to prioritize the highest-scoring suggestions.

Experience

Product Information Manager

May 2022 - Mar. 2025

BNB Crafts Inc.

Paramount, CA

- Managed and organized a database server of over 1000 SKUs for data accuracy and accessibility.
- Automated data management of products and customers across multiple locations using Python and internal APIs.
- Helped streamline the user experience for the company's website in HTML and CSS.

Technical Skills

Languages: C++, C, Python, SQL, JavaScript, Swift, MATLAB, HTML/CSS, LaTeX

Developer Tools: Git, CMake, SSH, Docker, VSCode, Visual Studio, vim, PyCharm, MIPS, Linux, Windows

Libraries/APIs: POSIX, DPP, cpr, nlohmann-json, MySQL, SQLite, curl