

Bertrand Bwashi

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SOFTWARE ENGINEER

Agile and self-motivated Software Developer with a passion for low-level programming and simulation. Proven track record of contributing to the design and implementation of features for web and mobile applications. Adept at conducting R&D with emerging technologies, code reviews, and bug resolution. Excellent communicator and team player, committed to agile methodologies for rapid product deployment.

EDUCATION

Holberton School, Tulsa, OK December 2023

Diploma in Linux Programming, Advanced Algorithms, and Blockchain in Computer Science

Relevant Coursework: Linux System Programming, Data Structures and Algorithms, Principles of Software Engineering and Testing (SDLC), Blockchain Architecture and Cryptography.

Missouri State University, Springfield, MO December 2013

Master of Arts in English Literature

Drury University, Springfield, MO May 2010

Bachelor of Science in Molecular Biology

Skills

Languages: Proficient in C, C++, Python, JavaScript, Ruby and SQL

Database: MySQL, PostgreSQL, MongoDB

Frameworks: Bootstrap, React, Ruby-on-Rails, Sinatra

Developer Tools: API Economy, Docker, Git, Vim, VS Code

Spoken Languages: English (Native), French (Native)

PROJECTS

Medication Management System November 2023

- Developed a medication management system that streamlines medication administration, tracking, and reporting processes while ensuring compliance with industry regulations.
- Backend: Ruby-on-Rails for development, FHIR server (Simplifier) for rapid prototyping, SQLite to store data.
- Frontend: React, React Native.
- Integration and messaging: HL7 messaging standards for exchanging medication data.
- Deployment and Hosting: GitHub Actions, Heroku (PaaS).

Industrial Automation Controller Update June 2023

- Developed and implemented real-time operational programs to optimize controller functionality using C.
- Coordinated seamless communication between controllers and peripheral devices via industry-standard protocols such as Modbus.
- Implemented low-level techniques (object pooling, buddy allocation, ect.) to optimize memory allocation and deallocation patterns to reduce fragmentation, improve caching and minimize page faults.
- Simplified program flow and reduced execution time leveraging techniques such as copy propagation, constant folding and dead store elimination to identify and eliminate redundant computations.

Advanced Shell Implementation

- Designed and built an advanced command shell program in C that parses input commands, handles I/O redirection and piping between processes, and manages background processes and proper process termination
- Implemented system calls like fork(), exec(), wait(), and pipe() to spawn processes, redirect I/O, and establish inter-process pipes for communication.
- Employed signal handling with sigaction() to ensure background processes can be automatically cleaned up.

EXPERIENCE

Martinrea International, Kansas City, MO

March 2021 - Present

Supply Chain Systems Analyst/Programmer

- Applied innovative data analysis, reporting, and visualization techniques, resulting in a 30% improvement in strategic decision-making with the use of statistical models and machine learning algorithms to forecast trends.
- Maintained and implemented Engineering Change Instructions (ECI) and Database updates to minimize obsolescence and eliminate downtime.
- Led Parts shortage recovery efforts, making crucial decisions on recovery methods (Ex: Expedite Carrier, Air Freight, Supplement) to meet the zero-downtime target and expedite cost targets.
- Orchestrated daily interactions with multiple internal production departments, coordinating the flow of North American Parts.
- Collaborated effectively within cross-functional groups to solve complex problems related to parts flow, availability, or systems issues.

Missouri Department of Mental Health, Kansas City, MO

January 2018 - March 2021

Regulatory Analyst

- Executed surveys, licensure inspections, and complaint investigations in alignment with federal and state policies
- Developed and maintained design specifications for new and future reports, ensuring accuracy, clarity, and consistency with regulatory standards.
- Collaborated with cross-functional teams, including legal, compliance, and clinical staff, to ensure regulatory requirements were met across various departments.

St. Cloud State University, St. Cloud, MN

August 2013 - December 2018

Adjunct Instructor - Technical Writing

- Designed and implemented interactive and engaging curriculum, including multimedia presentations and group discussions, to foster student participation and learning.
- Developed assignments that reflected real-world technical writing scenarios, such as creating user manuals, instruction guides, and technical reports, to help students apply their knowledge and skills practically.
- Provided individualized feedback and support to students, focusing on improving their writing style and overall document structure.
- Encouraged students to explore specialized topics in technical writing, such as API documentation, technical communication, and content strategy, to broaden their understanding of the field.
- Contributed to departmental efforts aimed at promoting diversity, equity, and inclusion in technical writing education, developing culturally responsive pedagogy and inclusive course materials.