Josué Mongan

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Github – Portfolio

Education

Université de Montréal Sep 2024 - Expected Aug 2026

Bachelor of Science, Computer Science *Montreal, Canada*
(Honors and Accelerated Tracks)

Coursework: Data Structures, Linear Algebra, Probability & Statistics, Discrete Mathematics, Software Engineering, Computer Architecture, Calculus

GoMyCode Senegal Jan 2024 - Jul 2024

Software Development Bootcamp *Dakar, Senegal*

Coursework: Web Architecture, Data Structures and Algorithms, Object-Oriented Programming, Asynchronous Programming, Databases (SQL & NoSQL), Full Stack Web Development, RESTful APIs, React.js

Awards

- **DIRO Excellence Scholarship**, *Université de Montréal, 2025*
  Awarded by the Association of Alumni of the Department of Computer Science and Operations Research (ADDIROUM) for strong academic performance and timely completion of program credits.
- **Valedictorian – Benin National Baccalaureate Exam**, *Ministry of Secondary and Technical Education, Benin, 2023*
  Recognized for achieving the highest national score in the 2023 Benin Baccalaureate.

Experience

Technical Assistant (Software Development) Jan 2025 – Ongoing
Université de Montréal - Digital Teaching and Learning Strategies Team *Montreal, Canada*

- Wrote maintainable and scalable front-end code, improving consistency and usability across multiple projects.
- Designed and implemented reusable Vue.js components that streamline course creation, enabling teachers to assemble and structure content efficiently.
- Developed features for a course management platform, directly improving instructors' workflow and content delivery.
- Contributed to a student-focused resilience app, enhancing tools that support academic and personal well-being.
- Participated in Scrum Agile processes, ensuring timely delivery of high-quality, user-centered solutions.

Full Stack Development Intern Aug 2024
Prodigy InfoTech *Mumbai, India*

- Completed four diverse full-stack projects within a one-month period, showcasing rapid learning and adaptability.
- Developed a secure user authentication system with login and registration functionality.
- Built an employee management web application enabling administrators to perform CRUD operations on employee records.
- Created a real-time chat application using WebSocket technology for instant messaging between users.
- Developed a social media platform, demonstrating full-stack development skills across front-end and back-end.

Projects

[P1] **NanoGoal-RL** – github.com/Josh012006/NanoGoal-RL

- Developed a 2D simulation environment for a nanorobot using Python and Gymnasium.
- Implemented goal-conditioned reinforcement learning (PPO/DDPG) enabling the agent to reach diverse targets autonomously.
- Visualized and analyzed learning trajectories, demonstrating skill in RL, simulation, and robotics-inspired problem solving.

[P2] **MaVille** – github.com/Josh012006/IFT2255-ma-ville-bugbusters

- Developed a full-stack city management platform with Java backend and React frontend
- Implemented CRUD operations for public works tracking and administration
- Integration of real-time notifications concerning the changes to the city's state

[P3] **RPG Game (in progress)** – github.com/Josh012006/RPG-Game

- Developing an interactive 2D game engine using C++ and SFML
- Designing object-oriented systems for characters, maps, and gameplay mechanics
- Implementing graphics rendering and collision detection for real-time interaction

[P4] **Appointment-App** – github.com/Josh012006/Appointment-App

- Built a full-stack scheduling application using Next.js, TypeScript, and MongoDB
- Developed dynamic appointment booking features and user authentication
- Ensured responsive design and reusable front-end components

[P5] **PLAST Implementation** – github.com/Josh012006/TP2-IFT3295

- Implemented a complex sequence search algorithm in Python, emphasizing efficient data structures, algorithm optimization, and modular code design.
- Developed core functionalities including k-mer extraction, pattern matching, and high scoring pair extension with performance considerations.
- Applied the algorithm to biological sequence analysis, demonstrating practical application in bioinformatics.

[P6] **Trie-Implementation** – github.com/Josh012006/Trie-Implementation

- Implemented a Trie data structure in C++ for efficient word storage and search
- Optimized insertion, search, and deletion operations

[P7] **Pythagorean-Tree** – github.com/Josh012006/Pythagorean-Tree

- Created a recursive visualization of the Pythagorean tree using C++ and PostScript
- Implemented geometric algorithms to compute positions of all branches
- Demonstrated recursive structures, algorithmic thinking, and graphics output

Technical Skills

Programming Languages : C/C++, Java, Python, JavaScript (ES6), TypeScript, Haskell
Web Development : HTML5, CSS3, Vue.js, React, Redux (Redux Toolkit), Tailwind CSS, Bootstrap, Node.js, Express.js, Next.js, Nuxt.js, RESTful APIs, MERN stack
Robotics & Systems : C/C++, Python, SFML, Algorithm design, Component-based programming
Databases : MongoDB, Mongoose, SQL basics
Tools & Practices : Git, GitHub, npm/yarn, Agile/Scrum workflows, Reusable & maintainable code

Interests

Robotics (Nanorobotics), Computer Vision, 3D Simulation, Game Development, Programming Language conception, Open-source Contribution

Languages

French (native), English (fluent)

Last edited: December 30, 2025