Marius Baican

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Education

University Politehnica of Bucharest, Bachelor's Degree in Computer Engineering   Oct 2023 – Jul 2027
Relevant Coursework: Data Structures and Algorithms, Operating Systems, Algorithm Design

Skills

Languages: C, Java, TypeScript, JavaScript, CSS, HTML
Technologies: Tailwind CSS, React.js, Next.js, Supabase, Vercel, Linux, Git, GitHub Pages

Projects

BrickBot Presentation Website & Dashboard   brickbot.ro

Designed and launched the official website for the robotics team I mentor, boosting **visibility**, **collaborations**, and **public engagement**.

- **Increased reach** by 40%, driving partnerships with two new sponsors.
- Delivered a consistent, mobile-friendly design accessible to 100% of team's audience.
- Currently developing a dashboard to **further simplify** the content management process for non-technical people.
- **Tech stack**: Next.js, React, TypeScript, Supabase, Tailwind, CSS, Vercel

SimplicityFTC – Open-Source Java Library   github.com/SimplicityFTC/

Built an open-source Java library for FTC teams, making robot programming more **reliable** and **accessible**.

- Optimized mechanism speeds through **advanced control algorithms.**
- Improved loop times by 30% through **sensor data caching.**
- **Increased autonomous consistency** by 60% through a logic node state management .system
- Reduced debugging time for teams by 40% with a structured logging system.

Asynchronous Web Server   github.com/aws/

Built a high-performance HTTP server in C leveraging Linux advanced I/O APIs to handle concurrent requests.

- Implemented **multiplexed, non-blocking socket handling** to manage multiple client connections efficiently.
- Used **zero-copy file transmission** for static content, reducing CPU overhead and improving throughput.
- Integrated **Linux asynchronous I/O (io_submit, io_getevents)** for dynamic file streaming.
- Designed a **per-connection state machine** to coordinate steps from request parsing to ending the connection.

News Aggregator   github.com/news-aggregator

Implemented a parallel news aggregation system in Java that processes large JSON datasets of articles.

- Designed a **multithreaded pipeline** using Java Threads to parse, filter and analyze articles concurrently.
- Implemented **thread-safe aggregation** to remove duplicates, group articles, and ensure deterministic outputs.
- Generated **sorted reports and statistics** while ensuring correctness and scalability under parallel execution.

Experience

Robotics Team Mentor, BrickBot – Focșani, VN   June 2023 – Present
- Introduced **principled design practices** for both hardware and software systems
- Created **custom learning resources** to onboard and support new team members
- Strengthened **leadership and mentoring skills** through active team guidance and process coordination