HRIMA MOHAMMED

Software Engineering Student

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Education

Mohammed VI Polytechnic University – 1337 School: Software Engineering 2022 - present

- Focus Areas: Experienced in Scalable Computing, Algorithm Design, Data Structures, and Problem Solving.
- Technical Expertise: Proficient in Object-Oriented Design, Complexity Analysis, and Software Optimization.
- Database & Deployment: Proficient in PostgreSQL, MySQL, and Docker.

Faculty of Science and Technology of Settat: Professional bachelor's in mechanical engineering 2018 - 2019

Institute of Aeronautical Trades: Alternating CNC Machining Training 2019

Specialized Technician Diploma in Mechanical Manufacturing 2018

Scientific Baccalaureate Mathematics B 2016

Projects

Compiler (wolf-c): github.com/mohammedhrima/Wolf-Compiler (in progress)

- Designed to translate Python-like syntax with strong typing into assembly language using C
- Implemented recursive descent parsing for syntax analysis and code validation
- Developed an intermediate representation (IR) to optimize code before assembly generation
- Enhanced performance through three-address code optimization
- Generated assembly code directly, eliminating reliance on third-party frameworks for better control
- Created a tester to verify the correctness of the generated assembly code

WebServer: github.com/mohammedhrima/Webserver

- Developed a high-performance C++ webserver based on RFC standards, ensuring compliance with industry protocols.
- Designed to serve static content efficiently, with architecture similar to Nginx, optimizing for speed and scalability.
- Implemented a concurrent HTTP server capable of managing multiple requests simultaneously, optimizing for low-latency performance.
- Create a tester to simulate client requests, ensuring the server's reliability in various use cases

Raytracer: github.com/mohammedhrima/Raytracer

- Designed and implemented a ray tracing algorithm using C++ to simulate realistic lighting, shadows, and reflections in 3D environments.
- Utilized advanced mathematical concepts, including vector mathematics, linear algebra, and geometry, to calculate intersections, lighting, and shading.
- Developed a multithreaded solution to parallelize ray tracing, improving rendering speed and efficiency.

Frontend Framework (UraJS): github.com/mohammedhrima/UraJS

- Developed reusable, modular components using JavaScript and JSX syntax
- Integrated TypeScript for strong typing, ensuring reliability and a seamless developer experience
- Designed an efficient state management system with optimized rendering using a reconciliation algorithm
- Implemented real-time rendering in Single Page Applications for fast development experience
- Design a dynamic routing system based on directory structure
- Created a build step with Docker and docker-compose to deploy Nginx to serve website’s static files

Experiences

Consigne LPF - Desktop Application for Team Communication 01/2022 - 02-2022

- Designed and implemented a system to manage and record messages between teams working in three shifts
- Utilized Python Eel to build an intuitive desktop interface that allowed machinists to easily communicate.
- Designed the interface to record important machine status updates and other critical information effectively.

Catia and SolidWorks Trainer at Management Digital School, Mohammedia (Part time) 03/2021 - 06/2021

Method Preparation Technician at LPF Casablanca 2: 01/2021 - 01/2022

- Streamlined tasks with MS Project to match employee availability with client deadlines.
- Conducted meetings with clients to provide updates on the progress of their parts manufacturing.

CNC Machine Tool Technician at LPF Casablanca 1 11/2019 - 03/2020

Tools & Skills

Programming Languages: C, C++, Python, JavaScript, TypeScript

Tools: Docker, Git, PostgreSQL, MySQL, Docker Compose

Core Competencies: Algorithms Design, Data Structures, Problem Solving, Object-Oriented Design, Complexity Analysis, Software Optimization, Performance Tuning

Soft Skills: Collaboration, Problem Solving, Adaptability, Time Management, Technical Communication

Spoken Languages: English, French, Arabic

Personal Interests: Reading novels, Calisthenics, Continuous Learning