Ayoub Ech-chetyouy

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Education

- **It architect/Université Mohammed VI Polytechnique 1337** Tetouan, Morocco
  (Digital it architect); *2022 - 2025*

  Experienced in low-level programming, algorithms, and system design from 1337 Coding School.

Programming Skills

- **Languages**: Python, Java, C, C++, HTML, CSS, Javascipt, Node.js, SQL, JSON, NoSQL
- **Back-end**: Django, Nest.js, Python, Java
- **Front-end**: Next.js, React, VanillaJS
- **Technologies and Frameworks**:RestAPI, AWS, Azure, RedHat Tools, MLOps, DevOps Tools, Openshift, Codefresh, Bash

Experience

- **Upwork** Remote
  Software Engineer - Part time *Oct 2021 - 2024*
  - Developed custom automation scripts and web scraping tools using Python
  - Worked on server configurations, API integrations, and data processing for clients.

Projects

- **Webserv – Lightweight HTTP Server in C++ 98** This project is a lightweight HTTP server built in C++98 as part of the 42 school curriculum. It implements essential web server functionalities, including handling HTTP requests, managing connections using non-blocking I/O (epoll/kqueue), and supporting CGI execution with Python. The server is designed to be modular, following the HTTP/1.1 specification while ensuring performance and reliability.
- **Cub3D – Raycasting Engine in C** Cub3D is a 3D game engine built in C using the raycasting technique, inspired by Wolfenstein 3D. Developed as part of the 42 school curriculum, it renders a first-person perspective environment using a 2D map. The project includes player movement, texture mapping, and collision detection, with an innovative feature that allows controlling the game using hand gestures instead of traditional input methods.
- **Cub3D Hand Control – Gesture-Based Gameplay in C** This project extends Cub3D by introducing hand gesture controls, allowing players to navigate the game without a keyboard or mouse. Built in C, it integrates computer vision techniques to track hand movements and translate them into in-game actions. This innovative approach enhances immersion and demonstrates real-time gesture recognition for interactive gameplay.
- **Q-Learning Maze Agent – Reinforcement Learning Pathfinding** This project implements a Q-learning agent that navigates a maze using reinforcement learning. The agent learns optimal paths through trial and error, improving its decision-making over time. It demonstrates fundamental machine learning concepts such as exploration, exploitation, and reward-based learning, making it a great introduction to reinforcement learning and AI-driven pathfinding.
- **Image-to-XPM – Convert Images to XPM Format** This tool converts standard image files into XPM (X PixMap) format, commonly used in C graphics programming. It efficiently processes images, preserving colors and details while generating XPM-compatible output. Ideal for developers working on graphical applications that require lightweight and easily embeddable image assets.
- **PONGIT – Multiplayer Pong with Modern Features** PONGIT is a modern reimagining of the classic Pong game, featuring real-time multiplayer gameplay. Developed with a focus on smooth networking and responsive controls, it offers an engaging experience for players. The project showcases advanced game mechanics, real-time physics, and an interactive user interface, making it a fun and competitive arcade game.

Accomplishments

- **Second Place** - Second Place in the Cybersecurity Hackathon at 1337
- **Fifth Place** - Fifth Place in the qualification round of the biggest Competitive Programming competition at INPT, Morocco.