BORDEI HORIA MATEI

Automation and Applied Informatics Engineer

Developer

PROFILE

Enthusiastic and creative developer with a passion for DIY projects like game developing, networking enthusiast, and 3D designer.

My expertise spans creating immersive gaming experiences, setting up advanced home lab networks, and designing high-precision CNC machines for intricate projects.

I excel in implementing multiplayer systems, optimizing network performance, and developing detailed 3D models and mechanical components for various applications.

My diverse skill set and dedication to innovation drive me to deliver high-quality solutions in every project I undertake..

CONTACT

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EXPERIENCE

Alien Core SRL

2020-2023

I developed skills and specialized in the design of electronic circuits, 3D designing of CNC, and 3D design of CNC systems. Additionally, the company focuses on CO2 laser cutting technology, plasma cutting systems, and various automation projects. My role involved contributing in 3D Design, PCB design and assembly on complex manufacturing machines.

Disk Jockey

2014-PRESENT

I have experience as a DJ, sound mastering and music production, specializing in creating dynamic and engaging music. Additionally, I have a background in music production with tracks and remixes that have been well-received by listeners and on all streaming platforms. My passion for music drives me to deliver high-quality performances and productions.

SKILLS

- 3D Design
- Networking
- C++/C/HTML/CSS/Javascript
- Sound Mastering
- PCB Design
- Creative problem solving
- Communication skills

EDUCATION

High School Miguel de Cervantes

2015-2019

Mathematics and Informatics

Hyperion University

2020-2024

Automation and Applied Informatics

UNREAL ENGINE 5 PROJECT: WGS

Languages:

- Romanian - Native
- English – Advanced
- Spanish - Beginner

2021-PRESENT

I have working on an Unreal Engine 5 first-person project focused on survival and farming. In this project, I implemented a wide range of advanced features and systems to create a comprehensive and immersive gameplay experience.

LEARNED SKILLS

- 3D Modeling
- Blueprints (Visual Programing)
- Replication
- Animations
- Shaders
- Landscaping

SUMMARY

I developed some basic game mechanics, ensuring the core gameplay elements were solid, created a robust inventory system designed for multiplayer support, incorporating necessary replication to ensure interaction between players. To enhance the multiplayer experience further, I integrated the Steam Advanced Sessions plugin, enabling easy to join and efficient multiplayer sessions on the Steam platform.

I designed and implemented interactive interfaces, allowing players to “connect” with the game world in an immersive way and also worked on player animations, bringing characters to life with realistic movements. I implemented stamina, health, and stats mechanics, incorporating features such as sprinting and other physical actions.

In terms of environment creation, I make some 3D object modeling for various props, ensuring a high level of detail and also focused on landscaping, designing and creating multiple biomes with variations and visually environments for explore including particle systems to enhance the visual effects in the game. My work on level design ensured that each area of the game was engaging and offered unique challenges and experiences.

I handled sound attenuation and prop sounds, ensuring that audio elements were realistic.

I developed shaders and dynamic materials, enhancing the visuals of the game world.

Throughout the project, I utilized Blueprints scripting to develop and craft various gameplay systems.

I learned a wide range of skills, from core gameplay mechanics and multiplayer systems to detailed environment creation. This comprehensive approach ensured a polished and engaging experience for players, combining survival and farming elements in a dynamic and immersive first-person game.

PROJECT COMPONENTS

- Inventory System
- Multiplayer
- Mechanics
- Biomes
- Game Progression
- Dynamic Materials
- Sound Attenuation
- Health, Stamina, Cold/Heat resist
- Steam Sessions

HOMELAB PROJECT: 10G NETWORKING

2022-PRESENT

I experience setting up and managing a home lab network designed for high-speed performance. My home lab includes a 10G switch equipped with SFP+ cages and RJ45 transceivers.

The core of my home lab network is a robust server configured to handle various tasks and have some deployed docker containers with services and used for data storage and backup.

In addition to the server, my home lab network includes multiple client devices, all connected through 10 Gbps links.

To ensure the network operates at optimal performance, I make some testing using iPerf (testing throughput of the network).

LEARNED SKILLS

- CISCO CCNA1v7 certificate
- Network Typology
- CICSO iOS
- Subnets
- Network Modeling
- OSI Model

A 3-AXIS CNC MILL MACHINE FOR PCB PRODUCTION

This project is a bachelor's thesis by me, submitted to the Hyperion University of Bucharest, Faculty of Exact and Engineering Sciences, specializing in Automation and Applied Informatics. The thesis is titled "CNC Machine for Milling Copper Layers from Electronic Boards".

The project involves the design, assembly, configuration, calibration, and testing of a 3-axis CNC machine intended for creating electronic board traces. The CNC machine is expected to mill conductive copper layers from electronic boards with high precision and be capable of milling soft metals. It should have a maximum deviation of 0.1 mm to plant SMT 0805 components and be equipped with axis limit sensors and software limits. The machine will feature Wi-Fi connectivity for firmware uploads and wireless configurations, stepper motors, and linear guides, with a minimum working area of 300 mm on the X and Y axes and at least 50 mm on the Z axis. It should also support tool path auto-leveling relative to the material height and function independently.

The thesis emphasizes the benefits of using open-source software and new technologies to create an efficient and precise CNC machine for PCB production. It aims to showcase the practical applications of combining new tech to enhance manufacturing processes.

LEARNED SKILLS

- 3D Design in SolidWorks
- 3D Assembly in SolidWorks
- PCB Design in EAGLE
- Toolpath Generation in ARTCAM
- Heightmap in Candle
- GCode Generation in FLATCAM
- GCode Interfacing in UGS
- 3D Printing in Cura