SWASTIK TOPRANI
Game Engine Developer | Network Engineer

Warsaw, Poland *GitHub* *Linkedin* *Portfolio*

swastiktoprani@gmail.com   +48 698861971

PROFESSIONAL SUMMARY

I'm a C++ developer interested in systems programming, game and engine development, and telecom-focused software. I work primarily with Linux/Unix environments, Git-based workflows, and user-space debugging, and I enjoy building engine-level components, CLI tools, and real-time networked backends. I'm particularly interested in modern C++, tooling, automated testing, and telecom/5G concepts such as packet and data processing.

PROJECT EXPERIENCE

TG_3SIXO — Real-Time Traffic Simulation Backend
Sep 2025 - Oct 2025

C++ | JS/HTML | CMake | FastAPI | Python | HackYeah(2025)

Architected a real-time routing engine in C++17 modeled after telecom-grade link-state systems.
- **Led a 6-member** team through **system architecture** and **backend delivery** to provide an **end-to-end demo**.
- Implemented a backend using **SSE** and **concurrency** primitives to stream live **ETA updates** to a JS frontend.
- Devised a **Dijkstra routing** core with **dynamic weight adjustments** for baseline vs. disrupted route comparison.
- **Established** Python sidecars to ingest **GTFS-RT** data and **decouple** external data feeds from the core.
- **Generated TransitDNA**, an analytics module that uses **pattern recognition** to **forecast expected delays**

Gnome Splash - Local Multiplayer Game
May 2025 - Jun 2025

C++ | Unreal Engine

Directed gameplay programming for a local multiplayer split-screen PvP game.
- Developed **multiplayer instances for** up to **-4 players** created **damage**, respawn, and **player spawning** systems.
- Designed **UI and HUD** features, like health bars, cooldowns, and menus.
- **Optimized** player experience by integrating enhanced input and smooth match flow from **menus to gameplay**
- Delivered the game in **7-weeks** under extreme time-constraints from **Prototyping** , Alpha , Testing and **Gold** .

Secrets of the Mansion
Dec 2024 - Jan 2025

C# | Unity | FMOD

Story-based click-and-move adventure with interactive puzzles, UI systems, and an immersive narrative flow.
- Designed and implemented in-game **UI elements** including menus and **HUD components**.
- Focused on UI clarity, **responsiveness**, and **player usability**.
- Worked within a **10–20** person team using **Jira** for task tracking and sprint coordination.
- Supported gameplay features by debugging UI–gameplay interactions and refining features through playtesting.

TECHNICAL SKILLS

1. **Languages & Paradigms :** C | Modern C++ (14/17/20) | C# | OOP / OOD | STL | Unit Testing (learning)
2. **Tools & Build Systems :** CMake | Git | Perforce | Linux / Ubuntu | Unreal Engine 5 | Unity
3. **Libraries & Frameworks :** Boost (familiar) | OpenGL | GLFW | GLM | ImGui
4. **Systems & Networking :** Sockets | Unix-like Environments | UMTS/LTE (learning) | Cloud & DevOps (learning)
5. **Engineering Practices :** Agile / Scrum (Jira) | Technical Communication | Project Ownership | Team Collaboration

Additional Skills

EDUCATION

Diploma (Programming Specialization in Game Engine dev.)
Sep 2024 - Dec 2026
FutureGames Warsaw

Bachelor of Engineering in Computer Science
Aug 2020 - Jun 2024
Chandigarh University

PERSONAL PROJECTS

C++ Game Engine — Custom rendering pipeline (in progress)
Nov 2025 - Present

C++20 │ OpenGL │ GLSL │ GLM │ GLFW │ ImGui │ Linux

Developing a C++ OpenGL 3.3 game engine with a modular Renderer, Scene, and Shader Manager architecture.
- Implemented the rendering pipeline using VAO/VBO/EBO, MVP transforms, and a perspective Camera (FOV).
- Added asset support with an OBJ loader and MeshManager caching to reuse meshes across entities.
- Integrated editor tooling with ImGui Dockspace, Hierarchy/Inspector, and real-time Transform editing.

CLI To-Do List — Embedded-Style Command-Line Utility
Aug 2025 - Sep 2025

C++17 │ CMake │ Linux │ File System │ State Management

Built a deterministic command-line tool with a custom REPL loop and similar to *system diagnostic* CLIs.
- Designed a Task class with ***encapsulated*** state, auto-increment IDs, and safe text-file ***persistence*** .
- Followed industry ***tooling and structure*** CMake, file management and git to mirror real ***workflows***.

C++ Networking — Multithreaded TCP Chat Server (In Progress)
Aug 2026 - Present

C++20/23 │ Boost.Asio │ Linux (Ubuntu) │ TCP/IP │ Sockets │ Threads

Building a TCP client–chat server prototype in C++ using Boost.Asio on Linux.
- Practicing Linux Essentials topics (terminal, processes, permissions, networking tools) alongside coding.
- Following production-like workflows with g++, CMake, and git to grow toward systems roles.

Additional Projects

ADDITIONAL INFORMATION

- **Languages:** English (Fluent) , Hindi (Native)
- **Certifications:** Object-Oriented Data Structures in C++ , Cloud Virtualization, Containers and APIs
- **Activities:** Organized a Hackathon in 2022 , Participated In Hackyeah2025
- **Interests:** Basketball │ Reading │ Travelling │ Swimming │ Discord community building

REFERENCES

Jeremiasz Kacprzak

Mentor/Programmer at The Astronauts

Phone : +48 782 827 105
Email : kacprzakjeremiasz@gmail.com

Maria Glowacka

Senior Franchise Manger - CD Projekt Red

Phone : +48 502 608 571
Email : majkaglowacka@icloud.com

Piotr Matecki

Head of FutureGames Warsaw

Phone : +48 799 094 740
Email : piotr.matecki@futuregames.se