HALİL HAKAN ÇOPUR

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SUMMARY

Gameplay Programmer with a background in C++ software engineering and R&D. Designed and developed a complete multiplayer co-op game in Unreal Engine 5, handling gameplay systems, networking, optimization, UI/UX, and Steam integration. Previously built real-time simulation frameworks for V2X communication and autonomous vehicle testing.

EDUCATION

Marmara University *BS, Electrical and Electronics Engineering Istanbul, Turkey* *Sep. 2021*

GPA: 3.26/4.00

- ***Graduation Project Achievement (2021):*** *Collaborated on a team project to develop a Neural Machine Translation (NMT) system for Turkish-to-Turkish Sign Language (TSL) translation. Designed and implemented a mobile app that integrated custom sign language animations to 3D Avatar with outputs from a deep learning model in a Unity. These accomplishments led to the team's first-place win in TUBITAK's highly competitive national "2242 University Students Research Project Competitions.". Certificate ID : 12738860096323*

WORK EXPERIENCE

VeNIT Lab *Software Engineer Istanbul, Turkey* *Nov. 2021 – Nov.2023*

- Developed real-time simulation frameworks for V2X (Vehicle-to-Everything) applications using C++, Docker, and Unreal Engine, focused on autonomous vehicle safety and connectivity testing.
- Integrated the CARLA simulator with custom C++ APIs for vehicle control, platoon logic, and sensor emulation, enabling realistic traffic behavior and multi-agent testing.
- Created a Digital Twin environment in Unreal Engine for simulating a university campus with randomized traffic scenarios to validate object detection systems.
- Collaborated on a monocular object detection pipeline using Python and deep learning, broadcasting detection results via V2X protocols.
- Contributed to the EU-funded InSecTT Project, focusing on secure and intelligent transportation systems.

Technologies: *C++, Python, Unreal Engine, Docker, CARLA, gRPC, GitLab, Jira, Linux*

GAME DEVELOPMENT EXPERIENCE

Skyward Steps Together *— Indie Game Developer* *Nov.2023 – Present*

- Designed and developed a multiplayer co-op climbing and puzzle platformer in UE5, implementing core gameplay, networking, UI, and Steam integration features.
- Built modular puzzle systems including dials, sliding images/numbers, electricity activation, and a piano puzzle with real-time note tracking.
- Developed interactive mechanics such as pushable objects, elevators, portal doors, wind hazards, balloon-based traversal, and networked electrical traps with dynamic behavior.
- Created a custom Steam leaderboard plugin supporting asynchronous score upload/download with UI integration.
- Engineered a multiplayer-compatible UI framework, including interface-driven world interactions, radial skill menus, and pop-up tutorial widgets with typewriter text and embedded videos.
- Implemented a full lobby and character customization system (hats, torso, pants, shoes) supporting both solo and co-op sessions.
- Optimized replication, animation, and network performance to ensure smooth multiplayer gameplay across large vertical levels.

Technologies: *Unreal Engine 5, Blueprints Visual Scripting, C++, Steam API, Git LFS, Multiplayer Replication, Unreal Insights*

SKİLLS

- **Game Development & Engine Tools**
  - *Unreal Engine 5, C++, Blueprints, Animation Blueprint, UMG (UI), Steam API, Multiplayer Replication, Unreal Insights*
- **Programming Languages**
  - *C++, Python, Blueprint Visual Scripting, MATLAB, C#, Java*
- **Version Control & IDEs**
  - *Git, GitHub, GitLab, Visual Studio, JetBrains IDEs*
- **Others**
  - *Bash/Shell, Docker, Jira, Linux*
- **Soft Skills**
  - *Team Collaboration, Problem-Solving, Effective Research Abilities, Continuous Learner,*
- **Languages**
  - *Turkish (Native), English*
