ARZU MERT
Game Developer
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SUMMARY

Game Developer specializing in system design, modular architecture, and gameplay frameworks across Unreal Engine and Unity. Skilled in C++ and C#, with experience developing gameplay systems, AI logic, and real-time simulations. Brings a structured, analytical approach rooted in a physics background to creative problem solving in game development.

SKILLS

- **Programming Languages:** C++, C, C#, Blueprint
- **Game Engines & Tools:** Unreal Engine 5, Unity 6, Blender, Visual Studio, Git
- **Development Areas:** Gameplay Systems, System Architecture, Component-Based Design, AI Logic, Physics Simulations, Simulation Design, Modular Frameworks, UI Programming (MVP Pattern)
- **Operating Systems:** Windows, Linux, macOS

RELEVANT EXPERIENCE

Indie Game Developer, Oct 2023 - Present**,** Self-Employed, Bursa, Turkey

- Developing modular gameplay systems across Unreal Engine and Unity using C++ and C#.
- In Unreal Engine, developing modular gameplay systems in C++ and Blueprint, including a third-person RPG prototype and Niagara-based radar, laser, and simulation effects, while building reusable plugin foundations.
- In Unity, expanding on modular gameplay systems and an MVP-based UI framework, exploring AI-driven mechanics through Match3, two-player zero-sum games, 3D painting, and tower defense prototypes.
- In Blender, modeling stylized, low-poly 3D assets for game development.

Game Developer, Dec 2022 - Sep 2023, Multiplayer, Remote, Turkey

- Worked as part of a development team on a multiplayer turn-based strategy game, focusing on AI behavior and core gameplay systems with merge-based combat mechanics.
- Refactored and optimized the existing codebase to improve performance and responsiveness. Enhanced AI logic to create more adaptive and challenging opponents, increasing replay value and overall gameplay depth.

Game Developer, Mar 2022 - Sep 2022, Cube Games, Remote, Turkey

- Developed prototypes for hyper-casual mobile games using the Unity3D engine and C#.
- Planned, designed, and implemented game core and mechanics.
- Created user interfaces and incorporated particle effects and animations.
- Streamlined processes with editor tools, ensuring enjoyable gameplay through level design.
- Committed to continuous learning and deepening understanding of design patterns, SOLID principles, and UML concepts.

Game Developer, Jun 2021 - Aug 2021**,** Dumbbell Games, Remote, Turkey

- Developed hyper-casual mobile game prototypes using Unity3D engine and C#.

Computational Physicist, Mar 2020 - Jan 2021, RADAP, Bursa, Turkey

- Developed multi-threaded Geant4-based C++ simulation applications for medical physics.

Computational Physicist, May 2014 - Dec 2014, Feb 2015 - May 2015, IRADETS, Istanbul, Turkey

- Developed various multi-threaded C++ radiation analysis applications based on Geant4 simulation toolkit for e-linac systems, a designated subunit of the Solar Orbiter Mission, and microelectronics operating in space environments.
- Coded a radiation analysis program using the Spenvis package to evaluate the potential impacts of the space environment.
- Significantly optimized the CAD to GDML Converter program using Open Cascade and Xerces-C++ libraries, resulting in a notable increase in processing speed and efficiency.
- Integrated components of the CAD to GDML Converter application with the QT UI using Python.

Research Assistant, Oct 2006 - Feb 2014, Bogazici University, Istanbul, Turkey

- Responsible for assisting various physics and computational physics courses, including Computer Applications in Physics, Programming with C, Programming with C++, Data Structures and Algorithms, and Computational Astrophysics.
- Supervised physics lab sections and conducted short lectures introducing lab assignments.
- Delivered problem-solving lectures to enhance students' understanding of complex physics concepts.
- Evaluated exams, lab assignments, and homework, and provided constructive feedback.
- Successfully guided students through research and project assignments, nurturing their analytical and programming skills.

Junior Software Developer, Sep 2000-Mar 2001, Veripark, Istanbul, Turkey

- Developed dynamic web applications using ASP, JavaScript, and SQL for interactive user experiences.

EDUCATION

Ph.D. Candidate in Physics, Sep 2007 - Jan 2020, Bogazici University, Istanbul, Turkey
Relevant Course: Advanced Computations in Physics.
Ph.D. Research:

- Monte Carlo Simulations of Dosimetry for the MR-Linac in the Presence of 0.35T Magnetic Field.
- Determination of Attenuation Properties of Materials Used in Protective Devices Against Medical X-Radiation.
- Detection of Ultra-High Energy Cosmic Ray Showers.
- X-Ray Data Analysis of Superclusters of Galaxies.

M.Sc. Physics, Sep 2004 - July 2007, Bogazici University, Istanbul, Turkey
M.Sc. Research: XMM-Newton data analysis of isolated radio-quiet neutron stars.

B.S. Physics, Sep 1993 -Mar 2001, Bogazici University, Istanbul, Turkey
Computer Option Courses: Introduction To Computer Usage, Programming With C, Visual Basic Application and Macro Programming, Database Systems, Internet Information Systems.

TRAINING

English - Advanced, Jan 2003 - June 2003, Richmond Adult Community College, London, United Kingdom

City&Guilds Programming In C++ - Advanced, Jan 2003 - June 2003, Richmond Adult Community College, London, United Kingdom