ARZU MERT
Physics Programmer
Game Developer

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Portfolio

US Work Authorization Status: I have been selected for the US Diversity Visa (DV) Lottery for 2024. I am awaiting the visa interview process, which is expected around March.

SUMMARY

Dedicated Game Developer focusing on creating innovative and engaging gaming experiences. Strong foundation in computational physics, complemented by actively developing proficiency in programming languages such as C, C++, and C# and enhancing skills in Unity3D, multithreading, optimization, software development, and game development competencies. Recognized for outstanding problem-solving abilities, meticulous attention to detail, an innovative mindset, and a collaborative approach. Eager to contribute robust technical skills and a creative perspective to dynamic gaming projects.

SKILLS

- Programming Languages: C, C++, C#, Python.
- Software Development: Object-Oriented Design, Data Structures, Algorithms, Multithreading.
- Tools: Visual Studio, Git, Unity3D.
- Operating Systems: Windows, Linux, Mac.

RELEVANT EXPERIENCE

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

- Programming a basic physics engine, showcasing ongoing expertise in physics programming and real-time simulation in gaming.
- Designing and developing a unique 2.5D game blending visual novels and tabletop RPG elements, featuring innovative physics and music puzzles to engage and challenge players.

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

- Refactored the existing codebase and introduced small new features to a multiplayer board game, greatly improving code efficiency and gameplay quality.
- Enhanced the AI of a multiplayer board game from basic to sophisticated, leveraging the NegaScout algorithm. This enhancement dramatically increased the game's challenge level, shifting from easily predictable to a near-impossible-to-beat AI. A chance factor was introduced to maintain gameplay enjoyment and balance, adding unpredictability and further engaging players.

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 instructing 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.

M.Sc. Physics, Sep 2004 - July 2007, Bogazici University, Istanbul, Turkey

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