

**ARZU MERT**  
**Physics Programmer**  
**Game Developer**

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## **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.
- Game Development: Unity3D.
- Tools: Visual Studio, Git.
- 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 Spensis 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