

Oskar Oramus

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Contact

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As a highly motivated individual, I am constantly pushing myself to achieve new heights of excellence. My abiding interest is in the use of mathematics to enhance software applications. I have a deep passion to achieve a high level of expertise in my field and work on ambitious, large-scale projects. Above all, I am eager to learn from and collaborate with other industry experts to continue expanding my knowledge and skill set.

Skills

- ❑ Deep understanding of applied mathematics including matrices, vectors, differential equations and calculus III.
- ❑ 8 years of experience programming, including 5 years using Unity Engine and 3 years in Web Development.
- ❑ Fluent in English, native speaker of Polish.
- ❑ Proficient in Git/GitHub, MySQL, Trello/Notion, Blender.
- ❑ Skilled in C#, HTML/CSS/JS, Python, Java, GLSL, C/C++.
- ❑ Experience in debugging and optimizing code.
- ❑ Strong problem-solving and analytical skills.
- ❑ Excellent communication and teamwork abilities.

Work

(Private Employer) - Mobile Game Developer (Freelance)

Sept 2021 - Current

Led development of a mobile game from concept to near completion, overseeing programming and design.

- Data driven architecture that facilitates quick iteration and prototyping.
- Fostered close communication within the team to ensure alignment and shared understanding.
- Event-driven architecture that allows for better game optimisation, and streamlines the process of creating new features that can seamlessly interact with each other.
- Dependency injection that enhances modularity and simplifies testing process.

(Under NDA) - AI Developer (Short Contract)

Jan 2023 - March 2023

Developed AI systems for enemies in a horror first-person shooter game.

- AI system that enables communication and coordination between individual AI agents.
- Animations using IK and blend trees to create smooth seamless animations.
- Enabled the AI to understand their surroundings and effectively utilize cover.
- AI that is able to strategically spread out and flank from multiple angles.

Notiontheory - AI Programmer (Short Contract)

Jul 2021 - Sept 2021

Using Houdini with AI acceleration to create procedural content. Creation of tools to improve workflow.

- Unused asset removal tool that allows to safely remove unnecessary assets.
- Greatly reduced project size and compilation time.
- Ability to accurately filter assets based on extensions, folders and set operations (intersections, union and difference).

Proximal Games LTD - Gameplay & Tool Programmer (Short Contract)

May 2022

Contributed to gameplay programming and created custom tools for game development.

- Decoupled the codebase to enable fast and predictable modifications for game designers.
- Abstracted the game logic to increase flexibility and adaptability.
- Addressed architectural concerns and helped devise a more effective system.

FiveMinuteGames - Mobile Game Prototype Developer (One Time Project)

Dec 2022 - Jan 2023

Procedurally generated runner where players can use weapon pickups to navigate a zombie infested forest, featuring a unique art style.

- Optimized the game to work on mobile devices.
- Made visual adjustments with shaders to align with the style desired by the client.

Private Tutor

Provided private tutoring for individuals seeking to improve their game development skills.

- Personalized one-on-one programming and math tutoring sessions to match individual needs and skill levels.
- Support with homework assignments in languages such as C#, Javascript and Python.
- Helped identify performance issues and provided actionable recommendations for improvement.
- Explained concepts using multiple methods until students fully grasped the material.

Projects

KiRoX OS - Unity Engine

Designed and developed a dark web horror game that features a custom-built operating system. Written with scalability and maintainability in mind.

- High attention to detail of real operating systems.
- Fake file types that support images, audio and text.
- System for creating fake applications easily.
- Data driven content creation using an Sqlite3 local database.
- Fake browser capable of supporting cookies and sessions to keep the realism.

OpenGL 3D Render Engine

Created an engine, with custom post processing stacks, PBR shading, scene serialization and volumetric lighting.

- Soft shadows using dithering algorithms.
- Post processing stack with effects like volumetric lighting, ACES, saturation, vignette and gamma.
- Scene serialization that allows to save and load objects in scene.
- Scripting system that makes it easy to have custom logic on objects.
- GPU instancing for grass rendering and perlin noise for a natural wind effect.
- Procedural water shader using Trochoidal (Gerstner) waves.
- Procedural generated environment with data that is synced on the GPU for procedural object placement.
- Day / Night cycle using a custom skybox shader.

University Dissertation - Air Traffic Control using Reinforcement Learning

Explore the use of reinforcement learning to deliver safer, more efficient and predictable air traffic control.

- Custom implementation of the DDQN algorithm using TensorFlow and Cuda.
- Multi Agent Reinforcement Learning, using decentralized techniques to ensure scalability onto bigger problems.
- Curriculum learning to speed up the learning process.
- Visual debug tools that help keeping track of variables during training like loss, accuracy or reward over time.
- Custom built environments with carefully tweaked reward functions to ensure alignment with the predicted solution.

Rocket Jumper - Unity Engine

Physics driven, asynchronous multiplayer speedrun game, with spectate and replay feature, using custom API.

- Developed a server backend using Flask and Sqlite3 to support saving player progression.
- Custom launcher that self-updates the game when necessary. Keeping everyone's version up to date.
- Ability to save and load replays of runs on the server, providing players with ability to showcase their performance and learn from each other's techniques.
- Local replay save system for ability to analyse runs and improve the times even when offline.

Education

University of Exeter

Bsc Computer Science

Sept 2019 - Jun 2023

Modules include: Artificial Intelligence, Differential Equations, Vector Calculus, Real Analysis, Data Structures and Algorithms, Computer Graphics, Nature-Inspired Computation, Machine Learning.