

# Krzysztof Grykiel

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Recent graduate with a master's degree in computer science seeking employment in game development.

## Education

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**The University of Edinburgh**

*September 2020 – July 2025*

**Master of Informatics with Honours (First Class)**

- Bachelor's (4<sup>th</sup> year) dissertation on integrating the x86 language in a compiler framework alongside the xDSL research group.
- Master's (5<sup>th</sup> year) dissertation on mass-spring-charge particle systems in computer simulation.
  - Joint with a research paper submitted to a computer graphics conference.

## Experience

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**School of Informatics at UoE**

Teaching Assistant/Marker/Tutor

*September 2024 – January 2025*

- Assisting in running the “Computer Graphics: Rendering” course at the University of Edinburgh.
- Responsible for creating coursework, marking and tutoring a class of over **100** students while strictly adhering to course schedule.

**Institute of Perception, Action and Behaviour at UoE**

Junior Research Assistant

*June 2024 – August 2024*

- Worked on improving an efficient algorithm for calculating Coulomb forces between particles and comparing it to state-of-the-art solutions.
- Fixed a critical bug in the algorithm, vastly improving accuracy (**10x** reduction in error).
- Recreated the algorithm in C++ and improved its efficiency by a factor between **10x** and **300x**.
- Outperformed state-of-the-art algorithms in speed and accuracy.

**Forcom Sp. z o.o.**

Software Engineering Intern (C#)

*July 2022 – August 2022*

- Worked on a large application codebase used by a popular technology shop chain within a professional environment.
- Created tests for important parts of the application increasing overall test coverage.
- Created efficiency-improving tools for other members of the team to use.

## Notable Projects

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**Physics-based Puzzle Game | Unity, C#** - Includes numerous environment interactions, object manipulation and seamless puzzle design. Moreover, handcrafted and textured 3D environments.

**Game-Like Interactive Experience | Unity, C#** - Heavy focus on shaders, lighting, and post-processing for best graphical effect. Also Involves 3D modelling, rigging and programming.

**Tabletop RPG with unique homebrew system (in development) | C#** - Custom fantasy setting with an action system about racing vehicles. NPC actions during races simulated via a program.

**Ray-Tracer | C++** - Including textures, Bounding Volume Hierarchy, path-tracing, BRDF sampling and more.

**Self-Playing Chessboard | C++, Rust** – Created in an 8-person group. I was the leader of the Software team as well as the overall representative of the project. Won the **Technicians' Award** for best project.

**Self-Playing Chessboard V2 | C++** - Working on an improved version of the project above. Responsible for developing the control software in C++.

**Top-Down Shooter Game | Godot, GDScript** – As part of a small team in a hobbyist game studio.

## Extracurriculars

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### xDSL | Junior Team Member

*June 2023 – June 2024*

Part of a team focused on developing a Python compiler framework.

- Implemented the x86 dialect allowing high level languages to be compiled into x86 assembly.
- Implemented support for Snitch, a highly specialised CPU architecture.
- Gained experience working in a large team and conforming to project's coding conventions.

### CompSoc | Vice-President

*May 2022 – May 2023*

CompSoc is one of the largest computer science societies in the UK with over a **1000** members.

- Responsible for organising large-scale events as well as cooperating and communicating with other societies and sub-societies.

### GameDevSIG | President

*May 2022 – May 2024*

Game Development Special Interest Group - a sub-society of CompSoc founded and fully coordinated by me.

An active community of over **200** people with beginner workshops, discussion groups and industry talks.

- Directed a video game project with over **20** society members including programmers, artists and sound designers as part of the society activities. Honed planning and leadership skills.
- Received the **Edinburgh Award** for contributions to Student Opportunities.

## Skills

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Languages: C#, C++, Python, C, Rust, Java, x86, DirectX12

Tools: Git/Github, Visual Studio, Unity, Godot, Gamemaker, Blender