

# Maciej Karczmarz

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## Projects

### Programming Projects

*Gix (Go)* - Developed a real-time currency exchange rate tool that aggregates data from local exchange offices for accurate/up-to-date currency tracking.

*GRAT (JavaFX)* - Interactive weather visualization system. The application integrates OpenWeatherMap, Google Maps and Windy APIs to deliver real-time environmental data alongside precise location context.

*GRATS (C++, OpenGL)* - Created a minimalist graphics renderer to provide a learning platform for OpenGL and graphics programming fundamentals.

*Sand-Simulation (C++)* - Granular physics engine focused on realistic particle behavior. The project simulates natural environmental interactions, emphasizing efficient computation and physical accuracy.

*Places of Rzeszow (JS)* - Web frontend development for a cultural mapping platform. Contributed to the user interface and interactive features of a system dedicated to local events and venues.

### Graphics Projects

*Unreal Engine 5 Project* - Developing realistic environments using Gaea 2.0 and Houdini tools, with focus on procedural workflows and software integration.

*ArtStation Profile* - Created a variety of 3D assets and visualizations, ranging from realistic architectural renders and product visualizations to stylized fantasy scenes.

## Languages

### Polish

Native

### English

B2+

### German

A1

## About me

**Backend & 3D Graphics Developer** - I have reasonable experience in backend development (mainly Go) and in creating and optimizing 3D assets. My projects range from backend applications and automation tools to 3D modeling, texturing, and rendering, sometimes combining both areas (e.g., interactive or real-time 3D content). I aim to work as a backend developer (with a focus on Cloud/Fin Ops) or in roles that connect 3D graphics with programming.

## Experience

### Simplicity Games

Technical Artist

Rzeszów, Poland

November 2024 - January 2025

**3D Model Creation & Optimization** - designing models in Blender from scratch and based on reference materials, creating optimized low-poly meshes, LODs, and collision meshes. Composing and processing PBR textures using tools such as Substance Painter, baking normal maps. Optimizing assets for performance and compliance with Unity Engine requirements, including UV improvements.

<https://simplicitygames.pl/>

## Education

### Rzeszow University of Technology

Computer Science

October 2022 - March 2026

### Bachelor's Studies - Faculty of Electrical and Computer Engineering, Rzeszow University of Technology

Engaged in a variety of academic and additional projects combining software development, data analysis, web technologies and 3D graphics. Key activities and achievements include:

- **C++ development** - designed and implemented a graphical simulation project as part of coursework.
- **Data Analysis** - applied Python, MATLAB, and R for data processing, visualization, and statistical modeling.
- **Team-based Web Development** - collaborated with peers from the faculty on a group project using React and modern web technologies.
- **AI Research Project** - developed an experimental AI solution (MLP Algorithm variants) within the Artificial Intelligence course, exploring machine learning concepts.
- **Hackathon Participation** - took part in events such as NASA Space Apps Challenge, DIGIEDUHACK, Hack SPACESHIELD or Hack CARPATHIA, focusing on rapid prototyping and problem-solving under time constraints.
- **Student Research Group** - member of SKNI KOD since 2022, contributing to multiple collaborative and independent projects in software engineering and 3D graphics.

### Public High School, Diploma

STEM (Mathematics, Physics, Computer Science)

September 2019 - May 2022

- Extended Mathematics: 80% (Standard Mathematics: 100%)
- Extended English: 84% (Standard English: 98%)
- Extended Computer Science: 53%
- Extended Physics: 50%