

# Manuel Zechmann

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## EDUCATION

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### University of Vienna

Vienna, Austria

*Master of Science - MSc, Media Computer Science*

*Mar 2023 – Jun 2025 (Expected)*

- Master thesis on procedural planet generation, focusing on efficient terrain generation and rendering optimization through a custom Level of Detail (LOD) system.
- Preparing a paper for IFIP-ICEC 2025 based on the thesis, under the guidance of my professor.
- Completed coursework in advanced computer graphics, game engines, multimedia, computer vision, machine learning and software engineering. Developed a Vulkan-based game engine in C++ as part of the program. Demonstrated leadership skills in team-based projects, guiding collaboration and ensuring successful project completion.

### University of Vienna

Vienna, Austria

*Bachelor of Science - BSc, Computer Science*

*Oct 2019 – Jan 2023*

- Bachelor thesis on hand detection and pose recognition using deep learning with TensorFlow and Keras. Achieved 98% accuracy in hand detection and up to 90% accuracy in pose recognition, depending on the pose. The hand image generation process was done using Unity.
- Studied core computer science principles with a focus on C++, signal & image processing, and computer graphics.

## EXPERIENCE

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### ViewApp

Vienna, Austria

*Multimedia Software Engineer*

*Jun 2024 – Sep 2024, Jan 2025 – ongoing*

- Designed and developed tools in C++ and Unreal Engine to streamline artists' workflows, improving efficiency.
- Automated the build process for the games using TeamCity, reducing manual effort and minimizing errors.
- Resolved game bugs to enhance system stability and end-user experience.
- Collaborated closely with the team to meet deadlines in order to successfully release the latest game version.

### Partium

Vienna, Austria

*Junior Software Engineer*

*Oct 2022 – Mar 2024*

- Trained and tested ML models for spare parts from general datasets, achieving improved relevance.
- Researched, developed, and integrated an OCR component, streamlining text recognition for spare parts.
- Deployed microservices to beta environments using Docker and Kubernetes, ensuring seamless integration.
- Enhanced the CI/CD pipeline with additional checks and testing processes, improving system reliability.
- Optimized developer workflows by introducing custom tools like linters, accelerating development speed.

### Partium

Vienna, Austria

*Software Engineer Intern*

*Jul 2022 – Sep 2022*

- Explored Elasticsearch as a potential replacement for the existing search solution, conducting extensive testing.
- Successfully added Elasticsearch to the system, achieving notable speed improvements for larger datasets.
- Collaborated in a cross-functional Agile team, contributing to CI/CD pipelines and improving testing workflows.

## PROJECTS

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### Super Mario 64 ROM Hack | C++, Blender

- Created a custom ROM hack using the SM64-Decomp Git project for a competition.

### Vulkan-based Game Engine | Vulkan, C++, Windows, NVIDIA Physx

- Initially created for University, this game engine has been generalized and improved, but is still being worked on.

### PiCar-X with Computer Vision | Python, OpenCV, Computer Vision, Linux

- Assembled a PiCar-X and worked on computer vision projects to deepen expertise.
- Used NVIDIA Isaac Sim to better understand computer vision in robotics applications.

### Personal Website | HTML, CSS, JavaScript

- Built a personal website from scratch to showcase technical projects and achievements.

## SKILLS

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**Programming Languages:** C++, Python, JavaScript

**Core Skills:** Computer Graphics, Computer Vision, Game Development, Machine Learning

**Advanced Skills:** Large Language Models, Procedural Generation, Multimedia, Robotics, familiarity with SLAM

**Tools:** TensorFlow, PyTorch, familiarity with CUDA, Vulkan, OpenGL, Unreal Engine, Godot, NVIDIA PhysX, NVIDIA Isaac Sim

**Soft Skills:** Agile, communication, presentation skills, project coordination, leadership experience at university

**Languages:** German (Native), English (C2), Spanish (A2)