

Objective

Relentlessly learning young professional with over four years of development experience across PC, mobile, and console games, Virtual Reality, Android Applications, and Human Computer Interaction. Specializing in software engine development, computer graphics, and AI/Machine Learning applications. Skilled in developing complete and complex large-scale games using Unreal and Unity engines, with the potential for expansion in software engineering and architecture fields. Committed to leveraging agile methodologies and proficiency to deliver reliable results within tight deadlines. Known for converting cutting-edge technologies into creative solutions. Highly efficient team player adept at identifying, analyzing, and efficiently solving problems. Demonstrate effective collaboration with interdisciplinary teams.

Professional Skills

- Skilled in development with various graphics algorithms, including Octree, Ray Tracing, Illumination Models, and Convex Hull
- Strength in PC, mobile, and console game development in Unreal and Unity, utilizing diverse techniques such as memory control, data analysis, and deep learning, while applying C++, C#, Python, and Java programming with SOLID principles
- Proficient in rendering graphics, Virtual Reality (VR), Augmented Reality (AR), user interfaces, and animation using multiple Graphics APIs including OpenGL, GL Shading Language (GLSL), High-Level Shading Language (HLSL)
- Excel in optimizing performance and diagnostics using various profiling tools, including Valgrind and Unreal Insight
- Experienced in writing structured and maintainable code, and adept at using practical and suitable programming patterns

Experience

General Programmer, Limbic Entertainment, Langen

06/2023 - 02/2024

- Maintain and iteratively improve the game "Park Beyond" based on player feedback across released platforms
- Address console issues to optimize performance, reduce memory usage using data compressed, data alignment and padding, and prevent out-of-memory (OOM) errors with memory pool
- Conduct code reviews to enhance code quality, readability, maintainability and consistency
- Mentor junior developers, developing leadership potential

Junior Programmer, Limbic Entertainment, Langen

04/2021 - 05/2023

- Complete full game development project "Park Beyond" with C++ in Unreal, successfully shipping it across multiple platforms
- Design and implement data-driven systems, including animation, strut visualization, color customization, and agent rendering, enabling over 2000 agents to animate simultaneously, enhancing gameplay smoothness and visual quality for players
- Refactor systems and optimize rendering performance by restructuring system architecture, debugging logic and profiling
- Reduce response time by 80% through parallel computing integration in agent rendering system and bit packing in color customization system addressing memory limitations, and deliver customizable functionalities
- Conduct console development, integrate Downloadable Content, design Activity events, integrate into 8 game modules for console certification for product delivery, and optimize memory through profiling, debugging, logging, testing, and refactoring
- Integrate and maintain DLC, Banim and Camera shared plugins, and create system architecture, instruction and manuals
- Collaborate with multidisciplinary teams including graphics programmers, technical artists, designers, arts, and Quality Assurance, and support game development in other projects

Technician Programmer, TH Koeln, Koeln

09/2020 - 03/2021

- Guide development and debugging of gameplay mechanisms and UI/UX of a research app using C# in Unity, including player controllers and feedback systems, and optimize prototype based on feedback from player tests to enhance user engagement

Research Assistant, Bremen Logistic and Production Institution Gaming Lab (BIBA), Bremen

11/2019 - 06/2020

- Utilize C# and Unity to design a virtual warehouse environment, enhancing learning outcomes for logistics trainees
- Engineer IoT data integration into a virtual environment, elevating realism in logistics process simulations

IT Assistant, The Institute for Integrated Product Development (BIK), University Bremen, Bremen

08/2018 - 04/2019

- Support AI research projects, enhancing production efficiency and automation through advanced neural network applications including SSD, AlexNet, Auto Encoder, RCNN
- Research object localization and image classification using neural network models on Google Cloud Platform (GCP) with Kera and TensorFlow frameworks, reducing energy consumption in production processes for improved operational sustainability
- Implement object detection App, deploying deep learning models on Android with Java for real-time defect detection

Education

University of Bremen, Bremen

10/2017 - 04/2020

- M. SC. in Digital Media, focusing on computer graphics
- Master thesis: *Ray-Marching-Based Volume Rendering in a Game Engine*
 - Render Computer Tomography (CT) data with Unreal4 for efficient real-time viewing in Virtual Reality operation room
 - Program Ray-Marching with an octree acceleration structure for real-time rendering in HLSL, optimize visual quality with graphics algorithms (local ambient occlusion, Stochastic Jitter, SSAA) to prevent artefact and enhance user immersion
- Research project: Virtual Reality Coral Reef
 - Develop a gameplay system for coral reef ecology in virtual reality using C++ in Unreal, upload code to the repository via Git for review and revision of different versions, and maintain the project
 - Design a website using JavaScript and HTML
- Research thesis: *Understanding the Prevalent Issues of Airline Passengers Based on Customer Reviews*
 - Program Natural Language Processing techniques with Python to analyze text and push recommendation to Passengers

National Chung-Cheng University, Taiwan

09/2011 - 06/2014

- B. SC. in Computer Science and Informatics Engineering
- Bachelor project: *Glasses-Free 3D Interactive Projection System*, winning the Prize Third Equal of International ICT Innovation Service Contest in Taiwan (Ref. Cert. No. 102CSIM)
 - Render glasses-free 3D models in OpenGL, interacting with a user under gesture detection
 - Develop a Graphic User Interface (GUI), animate model with C++, and run data processing (Open Natural Interaction - OpenNI) in Kinect, and track the body motion of the user

Publication

- *Volumetric Medical Data Visualization for Collaborative VR Environments* in EuroVR 2020 (pp 178-191)
https://link.springer.com/chapter/10.1007/978-3-030-62655-6_11

Languages Skills

English (proficient, C1), German (intermediate, B1), Mandarin (native)

Software Skills

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|--------------------------|---|
| • Programming | C++ (advanced), C#, Python (proficient), C, Java, MATLAB (intermediate) |
| • Game Engine | Unreal, Unity (proficient) |
| • Graphics API | OpenGL, GL Shading Language (GLSL), High-Level Shading Language (HLSL) (proficient) |
| • Version Control System | Perforce, Git (proficient) |
| • Web Development | HTML, CSS, JavaScript (proficient) |
| • Project Management | Jira, Confluence (proficient) |
| • MS Office | Word, PowerPoint, Excel, Outlook (proficient) |

Development Projects Demonstration

- Projects collection: <https://ckc99u.github.io/>
- Project with C++ in Unreal: <https://www.bandainamcoent.com/games/park-beyond>
- Project with C# in Unity: https://www.th-koeln.de/hochschule/handyspiel-soll-jugendliche-draufgaengerinnen-und-draufgaenger-bei-der-selbstkontrolle-unterstuetzen_93848.php
- App deployed deep learning model on Android with Python: <https://www.biba.uni-bremen.de/presse/pressemitteilungen/2017/pressemitteilung-vom-12-oktober-2017.html>
- Website with HTML and JavaScript: <https://cqvr.cs.uni-bremen.de/teaching/studentprojects/VR Reef/>



Offenbach, 06.06.2024