Software Development Engineer

Shchochka Andrii - Dnipro, Ukraine
aladin273.itch.io
github.com/Aladin273
linkedin.com/in/aladin273
aladin273.work@gmail.com

SKILLS

- C++, STL / C#, .NET / Python
- Qt, OpenGL, Unreal Engine 5
- Git, CMake, Docker, Hyper-V, VirtualBox
- Visual Studio, VS Code, Qt Creator, Xcode
- Patterns, OOP, SOLID, Algorithms, Data Structures
- Software Development, Computer Graphics, GameDev, CAD
- Applied Mathematics, Linear Algebra, Computational Geometry

WORK EXPERIENCE

AMC Bridge, Dnipro – *Software Development Engineer*

oct 2021 – apr 2024

Project: Improving the routing algorithm in the event of a lack of signal in the physical environment
The project's goal is to improve routing in cases when the GPS signal is lost. Worked on the implementation of the algorithm and its adaptation to specific physical conditions.
Responsibilities: Implementation of feature detection and feature matching algorithm, testing and improvement of algorithm based on the specific environment conditions, creating test environments in Unreal Engine, configuration of Jetson Nano, investigation and setup of ArduPilot emulator, control system using MAVLink, build configuration using CMake, preparation of documentation and instructions.
Technologies/environment: C++, Python, Embedded, Machine Learning, OnnxRuntime, CUDA, TensorRT, OpenCV, ArduPilot, MAVLink, Unreal Engine 5, Nvidia Jetson, Visual Studio, Windows, Linux

Project: LiDAR Scan-to-BIM Floor Planner
The use of LiDAR technology allows scanning the surrounding area with ease and provides a possibility to promptly get accurate real-time 2D and 3D room models without requiring specialized knowledge, manual measurement tools, or an Internet connection. The LiDAR Scan-to-BIM Floor Planner enables working with plenty of formats and using exported floor plans in a range of design and 3D modeling tools.
Responsibilities: Documentation preparation, core logic development, bug fixing
Technologies/environment: Swift, ARKit, RoomPlan, LiDAR, Xcode, iOS, MacOS

Project: 3D Formats Translator
3D Formats Translator is a software component which allows to convers 3D geometry and metadata from files of different CAD formats such as Parasolid, STEP, IGES, ACIS, GLTF, STL, OBJ, Creo View, JT, Collada, Rhino, 3MF, URDF, and proprietary CAD formats such as SolidWorks, Solid Edge, Inventor, Catia, Creo, NX. The project constantly optimizes the conversion performance and quality and adds new formats support.
Responsibilities: Feature development, code refactoring, bug investigation and fixing.
Technologies/environment: C++, Qt, Parasolid, Bodyshop, DataKit, glTF, Qt Creator, Linux

Project: PointCloud Plugin for ArcGIS
Develop a plugin for ArcGIS that allows the user to post-process the point cloud. Work included an ability to import point clouds, and perform some basic operations, e.g. snapping, limit box, point projection, dimensioning, etc.
Responsibilities: Implementation and developing ArcGIS plugin skeleton, render point cloud using OpenGL, new feature implementation and bug fixing.
Technologies/environment: C#, .NET, Leica EpcA SDK, ArcGIS Pro SDK, OpenGL, Visual Studio,Windows

Project: PointCloud Plugin for SOLIDWORKS, Unreal Engine 5
The project involves adding new features to the sample application developed by the customer. New features implement the fitting of windows and doors. The initial data is a cloud of points without meshes. During implementation, it was necessary to implement algorithms for finding planes and lines in a fragment of a point cloud. Based on these lines and planes, the algorithm found the key elements of the windows/doors and rendered the windows/doors in the viewer.
Responsibilities: Feature implementation, developing Unreal Engine plugin skeleton, bug fixing
Technologies/environment: C++, Leica EpcA SDK, SOLIDWORKS, Unreal Engine 5, Analytic Geometry, Linear Algebra, Visual Studio, Windows

Project: From Triangle to Scene
Worked on implementation from scratch Mesh Editor to manipulate the triangle meshes that allow loading, viewing, and editing COLLADA mesh files. This includes developing COLLADA mesh files reader, a render system, a half-edge structure, algorithms for editing Mesh, and manipulators.
Responsibilities: Full implementation, bug fixing
Technologies/environment: C++, OpenGL, GLFW, GLM, TinyXML, COLLADA, Visual Studio, Windows

EDUCATION

DNU Oles Honchar, Dnipro – *bachelor`s degree*

Faculty of Applied Mathematics, 113 - Applied Mathematics

2019 – 2023

DNU Oles Honchar, Dnipro – *master's degree*

Faculty of Applied Mathematics, 113 - Applied Mathematics

2023 – 2024

LANGUAGES

Ukrainian (Native), English (Intermediate)

COURSES

Apriorit SummerProjects Camp

AMC Bridge Intensive Course on 3D Programming and Computer Graphics

Udemy Unreal Engine - The Complete Guide to C++ Development

Udemy Unreal Engine - Pro Game Coding

PET-PROJECTS

MeshEngine (OpenGL, ImGui, GLFW, glad, glm, assimp) / SecureMessenger (Qt, SQLite, tiny-AES-C)

Geometry Smash (UE5, C++, BP) / Cosmic Descent (UE5, C++, BP) / Custom Template (UE5, C++, BP)