

Shoe Design, Configuration, and Catalog App

A web-based tool developed for our customer enables users to design, configure, and showcase shoes with real-time 3D visualization.

Technologies Used

- **Frontend**
 - **Vue.js:** Builds the interactive user interface for shoe customization.
 - **Three.js Custom Rendering Pipeline:** Developed to achieve realistic, real-time shoe rendering directly in the browser.
- **Backend**
 - **Node.js:** Provides the server-side logic for managing application data and operations.

OtSoftware partnered with the client for 1.5 years to develop, enhance, and maintain the platform's 3D visualization capabilities, ensuring high performance and a seamless user experience.



Virtual Plant / Digital Twin

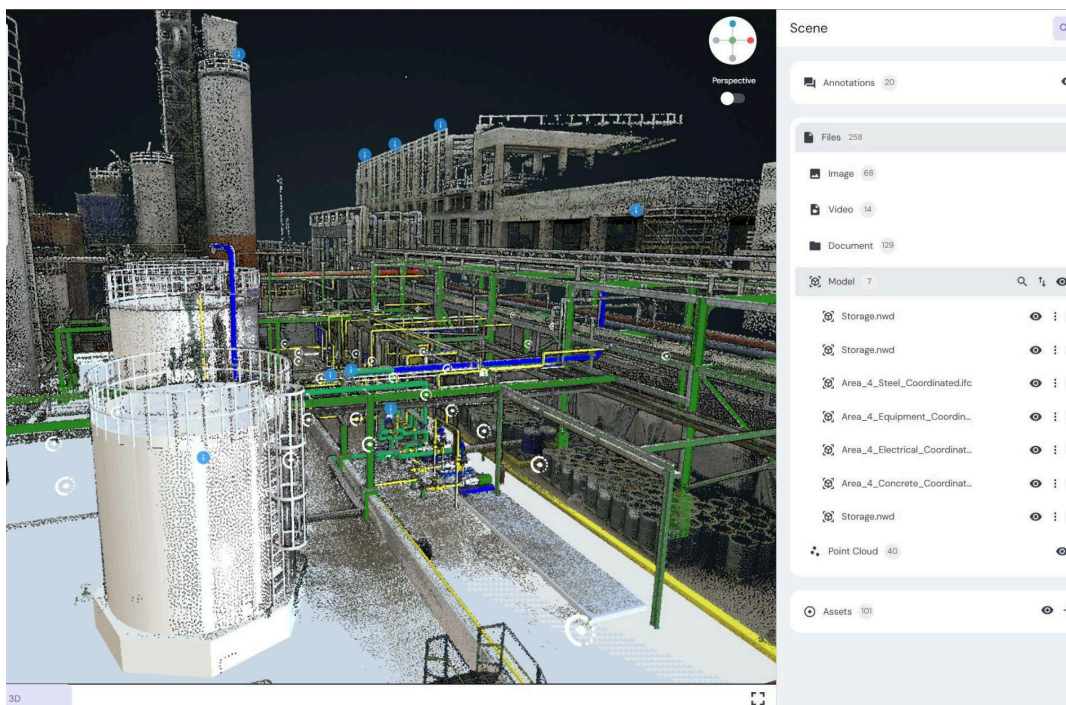
The Virtual Plant/Digital Twin platform transforms physical factory environments into interactive 3D digital replicas, enabling clients to manage factory zones through a web portal.

Technologies Used

- **Point Cloud Processing**
 - **AWS:** Handles the storage and processing of point cloud data scanned from factory environments.
 - **Three.js:** Renders and manipulates point cloud data in real-time on the web.
- **Digital Twin Creation**
 - **IFC Format:** Converts building infrastructure into 3D mesh models for accurate digital representation.
- **Frontend Development**
 - **ReactJS:** Delivers an intuitive, responsive web interface for users.
- **Optimization and Scalability**
 - Advanced CAD/CAM tools are developed to manipulate 3D data directly in the browser.
 - Efficient visualization techniques enable smooth interaction with large datasets.

OtSoftware ensures long-term support, managing the platform's 3D application development, framework maintenance, and updates.

This cutting-edge solution seamlessly integrates advanced technologies to enhance industrial digitalization.



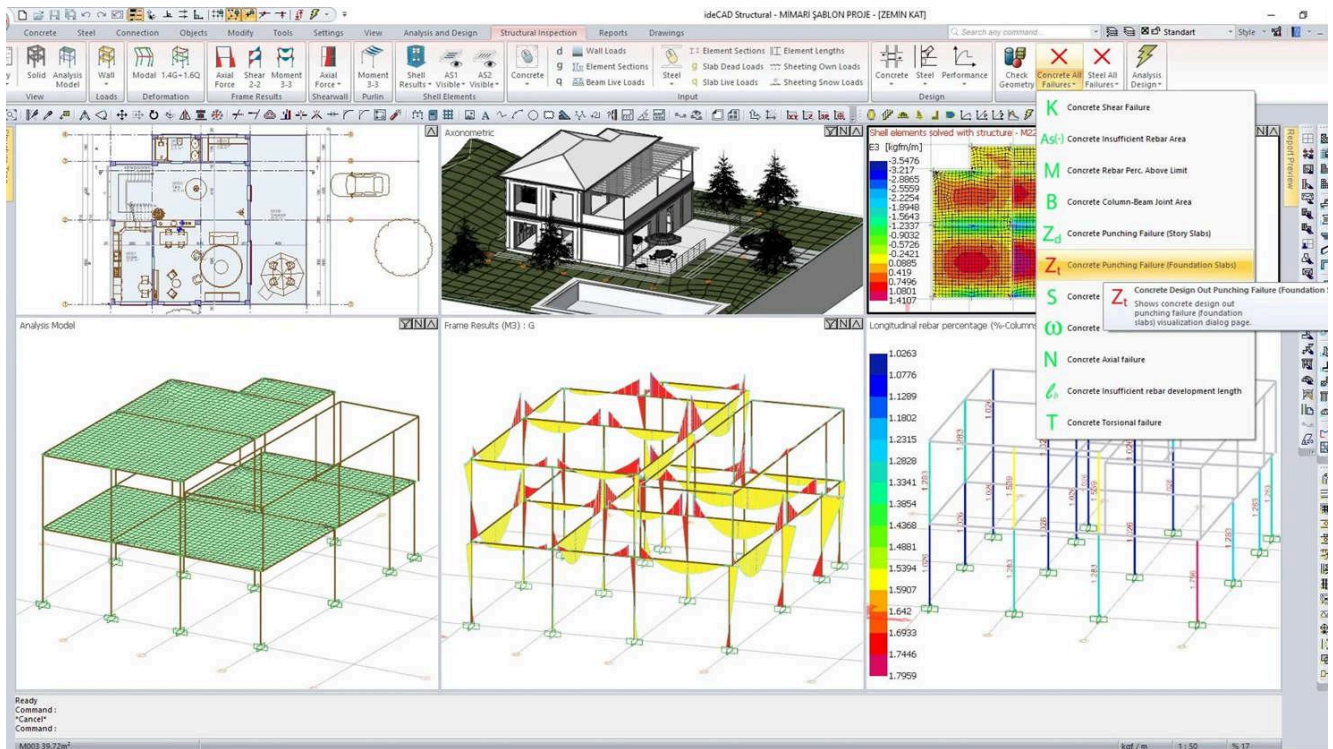
Architectural and Structural CAD Software Development

We have served as a long-term solution partner for over 8 years on the development of a comprehensive CAD software tailored for civil engineers and architects. The project focused on architectural design, structural modeling, and static analysis calculations.

The application was developed primarily in **C++ and OpenGL**, and our team was responsible for both feature development and modernization of a large, legacy codebase. We successfully integrated support for **industry-standard formats** such as **IFC and DWG**, enabling seamless import/export of architectural and structural models.

- Our contributions
 - Developing tools for **material assignment** and **camera animation** within architectural models.
 - Implementing structural design features such as **steel columns, beams, trusses, space frames**, and **scaffolding macros** for static calculations.
 - Addressing long-standing technical issues and enhancing maintainability and performance across the codebase.
 - Designing and extending the core architecture to support **modern development practices** while preserving domain-specific functionality.

This project demonstrated our ability to handle complex, domain-heavy applications and deliver robust, long-term development support within technically demanding environments.



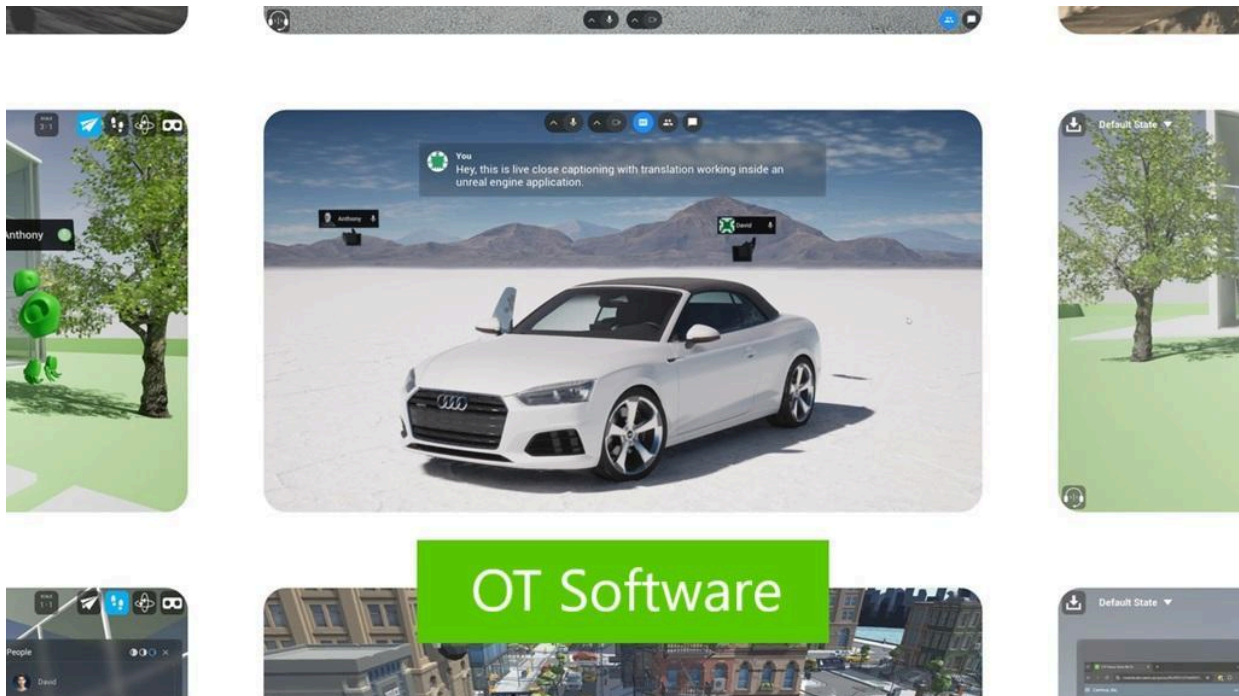
Unreal Engine Plugin - Spatial Connector

This plugin allows any unreal engine project to be turned into a multi user, online collaboration platform without requiring any coding or modification to the project. Adding plugin makes the project a hub for other collaborators to join in, and make persistent modifications.

Technologies Used

- Unreal Engine 4 / 5
 - The project is configured to be an independent C++ plugin which can easily be dropped into any unreal engine project's plugin folder.
 - Blue prints and base C++ classes are provided for customization to default behaviours, such as login screens, rooms and user's asset (3d objects, pdfs, videos, images etc.) archive.
 - Editor and Runtime plugin support. The plugin is designed to work both in editor and as published application.
- A cloud service is used to store live sessions, user information etc. Accessing to cloud services for gathering, creating and modifying the session data is done via an C# api provided by the Customer. We have created a server to use the C# api within unreal engine. GRPC is utilized to trigger C# api functions from Unreal Engine.

OtSoftware provided software development to design and implement software solutions to bring the project to life. We have helped the customer for 2 years to complete a plugin that can perform all requirements.



ToolKit - 3D Application Development Platform

ToolKit is a versatile technology designed to fulfill the diverse requirements of developing interactive 3D applications across multiple platforms, including web, mobile, and desktop. It is fully developed in-house to use in client projects.

Core Features and Capabilities

- 1. Advanced 3D Editor**
 - A feature-rich and customizable 3D editor for visualizing and manipulating a wide range of 3D file formats and scene structures.
 - Supports editing and customization of complex 3D assets with precision and flexibility.
- 2. Modular Programming Framework**
 - A robust framework enabling developers to incorporate interactivity into scenes using code.
 - Highly modular design allows for seamless integration of plugins to extend functionality without altering the core codebase.
- 3. Cross-Platform Deployment**
 - Write your code once and deploy it effortlessly across platforms.
 - Output your projects as:
 - **Web Applications:** Run directly in modern web browsers.
 - **Mobile Applications:** Publish for iOS and Android devices.
 - **Desktop Applications:** Create standalone apps for Windows, macOS, and Linux.
- 4. Efficiency and Scalability**
 - Built with performance and extensibility in mind, ensuring smooth operation even for large-scale 3D projects.
 - Designed for both individual developers and collaborative teams working on complex applications.

Applications

ToolKit is ideal for industries and domains that require interactive 3D solutions, such as:

- **Gaming:** Developing cross-platform games with custom interactive elements.
- **Industrial Simulations:** Creating virtual prototypes and training simulations.
- **Architectural Visualization:** Presenting dynamic 3D building models interactively.
- **Product Design:** Showcasing and configuring products in real time for e-commerce or prototyping.

Why Choose ToolKit?

By combining powerful editing capabilities, a flexible programming framework, and seamless cross-platform deployment, ToolKit empowers developers to create and deliver professional-grade 3D applications efficiently and effectively.

