Samuel Onuoha

Workflow & Digital Engineering Specialist — AEC & MFG • USD/Omniverse • BIM/VDC

Overview

I design and enable digital twin workflows across Architecture, Engineering, Construction (AEC) and Manufacturing (MFG). My expertise lies in **IFC→USD conversion**, **federated USD scene management**, and **geospatial integration**, using Omniverse, OpenUSD, and supporting toolchains. I build bridges between customer workflows and engineering teams, delivering demos, training, and feedback that accelerate adoption.

Key Workflow Highlights

IFC → USD pipelines: Python + ifcopenshell + USD APIs, reusable schemas for attributes/materials.**Federated USD scenes:** Variants & payload strategies for scalable Omniverse Composer/Kit workflows.**Geospatial alignment:** MGA55/GDA2020 transformations and Cesium streaming for linear rail, airports.**Customer enablement:** Training collateral, workflow demos, structured product feedback loops.

Selected Projects

IFC→USD Conversion & Federated Scenes
• Automated conversion of IFC into USD with metadata schemas.
• Created federated master stage with payload control and variants.

Geospatial & Cesium Integration
• Linked BIM models to survey coordinates (MGA55/GDA2020).
• Streamed terrain/satellite context via Cesium for immersive, accurate visualization.

Airport Digital Twin Roadmap
• Built Databricks pipelines to unify GIS, D365, BIM.
• Achieved 60% improvement in data-quality visibility, enabling airport twin initiative.

Tools & Technologies

Omniverse / USD: OpenUSD, Omniverse Composer/Kit
BIM / AEC: Revit, Civil 3D, Navisworks, Rhino, Grasshopper, Synchro, iTwin/iModel
MFG Apps: Inventor, Fusion 360, Salome
Programming & Data: Python, Polars, Databricks, SQL, PowerBI, Tableau
Interoperability: IFC/ifcopenshell, PyOCCT, ArcGIS/QGIS

Certifications

• MSc Global BIM Management — Zigurat
• Grad Cert Data Analytics — Deakin
• NVIDIA DLI — OpenUSD & Omniverse learning paths
• AnyLogic Multimethod Simulation (2025)
• Primavera P6, KNX & LonMark certifications

"I bridge AEC industry workflows with next-generation platforms like Omniverse, enabling scalable digital twins, real-time collaboration, and lifecycle intelligence."