

Experience

Unity 3D Engine • 10 years • PC/Mobile development
Unreal Engine • 7 years • Simulation development
Computer Vision • 8 years • AI/ML, rendering development
GPGPU/CUDA • 10 years • High performance computing

C/C++ • 20+ years • High perf systems, blockchains
Rust • 7 years • Blockchain, AI, simulation
Python • 20+ years • Tools and pipeline engineering
F#/C# • 10+ years • Apps, games and tools

Employment

Military Defense

Senior Simulation Scientist

2018-2022

- Leading team of contractors developing synthetic datasets for training ML models and photo-real environments for training robots.
- Developing scalable simulation systems for robot swarms using Unreal Engine, PX4, ROS (Robot Operating System)

Vertex Studio <https://vertexstudio.co/>

Applied R&D Director

2016-

- Developing deep learning pipelines using TensorFlow, real time pipelines using GStreamer and simulations using Unreal Engine, Unity 3D and custom engines.
- Developing core blockchains for scaling protocol-owned economies for games, simulations and XR experiences. Smart contracts, DeFi, GameFi, market makers.
- Maintaining custom Unreal Engine + NVidia PhysX for robotics applications.

Simbotic <https://simbotic.ai/>

Open Source Developer

2019-

- Leading development of open source simulation and AI platform for bridging the reality gap with digital twins.
- Working on real time pipelines for generating synthetic data for training AI models.
- Integrating physics-based dynamics and computer vision into game engines.
- Improving sample efficiency of reinforcement learning models with rich virtual environments with dense rewards.
- Maintaining several docker containers for CUDA, ROS, GStreamer and TensorFlow.
- Custom 3D engine development for vectorizing meta-layers for XR experiences.

Civil Maps <https://civilmaps.com/>

Simulation Consultant

2017-2019

Velodyne <https://velodynelidar.com/>

Galois <https://galois.com/>

- Sensor characterization, customization and visualization tools.
- Integration of Unreal Engine into development operations.
- Massive autonomous swarming simulation architecture for DARPA, DoD and similar agencies.

Red Pill VR <http://redpillvr.com/>

Systems Engineer & Technical Art

2016-2017

- Integrated real time deep learning inference for VR Music MMO game using TensorFlow, GStreamer and UE4.
- Physics-based VR gameplay, UX interaction and full-body VR networking.

Rawbots <https://rawbots.github.io/>

Indie Game Developer

2015-2016

- Designed and develop Rawbots, a robot crafting sandbox game. Robot simulations developed with Bullet Physics.

LucasArts & ILM <https://www.lucasfilm.com/>

AAA Game Developer

2005-2015

MunkyFun <https://www.munkyfun.com/>

Beyond Games <https://www.beyondgames.co/>

- Console game developer for Xbox, PlayStation, Nintendo, PC, iOS and Android.
- Gameplay, physics and network developer for multiple titles, most notable Star Wars: The Force Unleashed.
- Simulation tools for real-time special effects and pre-vis for several movies.

Skills

C • C++ • Rust
F# • C#
Python
Type/JavaScript
Erlang

ROS • PX4
TensorFlow GPU
GStreamer
UnrealEngine • Unity3D
Bullet Physics • PhysX

Console • PC • Mobile
OpenGL • CUDA • GLSL
THREE.js • A-Frame
ArrayFire
Nvidia Xavier/Jetson

Git • Github • Gitlab
Win • Linux • Android • iOS
Docker • AWS • GCP
TCP UDP WebRTC WebSockets
Make • CMake • Bazel