

Experience

Unity 3D Engine • 10 years • PC/Mobile development
Unreal Engine 4 • 5 years • Simulation development
Computer Vision • 8 years • AI/ML, rendering development
GPGPU/CUDA • 10 years • High performance computing

C/C++ • 10 years • High perf systems engineering
Rust • 5 years • Scalable distributed systems
Python • 10 years • Tools and pipeline engineering
F#/C# • 10 years • Apps, games and tools

Employment

Military Defense	Senior Simulation Scientist	2018-
<ul style="list-style-type: none"> 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 4, PX4, ROS (Robot Operating System) 		
Vertex Studio https://vertexstudio.co/	Applied R&D Director	2016-
<ul style="list-style-type: none"> Developing deep learning pipelines using TensorFlow, real time pipelines using GStreamer and simulations using Unreal Engine 4, Unity 3D and custom engines. Developing scalable distributed and decentralized systems, high performance networking and peer-to-peer swarm consensus. Maintaining custom Unreal Engine 4 + NVidia PhysX 4 for robotics applications. 		
Simbotic https://simbotic.ai/	Open Source Developer	2019-
<ul style="list-style-type: none"> Leading development of open source simulation and AI platform for bridging the reality gap. 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. 		
Civil Maps https://civilmaps.com/ Velodyne https://velodynelidar.com/ Galois https://galois.com/	Simulation Consultant	2017-2019
<ul style="list-style-type: none"> 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
<ul style="list-style-type: none"> 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
<ul style="list-style-type: none"> Designed and develop Rawbots, a robot crafting sandbox game. Robot simulations developed with Bullet Physics. 		
LucasArts & ILM https://www.lucasfilm.com/ MunkyFun https://www.munkyfun.com/ Beyond Games https://www.beyondgames.co/	AAA Game Developer	2005-2015
<ul style="list-style-type: none"> 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. 		

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
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