

## 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

<b>Shield AI</b>	<a href="https://www.shield.ai/">https://www.shield.ai/</a>	<b>Senior Simulation Scientist</b>	<b>2018-</b>
<ul style="list-style-type: none"> <li>Leading team of contractors developing synthetic datasets for training ML models and photo-real environments for training robots.</li> <li>Developing scalable simulation systems for robot swarms using Unreal Engine 4, PX4, ROS (Robot Operating System)</li> </ul>			
<b>Vertex Studio</b>	<a href="https://vertexstudio.co/">https://vertexstudio.co/</a>	<b>Applied R&amp;D Director</b>	<b>2016-</b>
<ul style="list-style-type: none"> <li>Developing deep learning pipelines using TensorFlow, real time pipelines using GStreamer and simulations using Unreal Engine 4, Unity 3D and custom engines.</li> <li>Developing scalable distributed and decentralized systems, high performance networking and peer-to-peer swarm consensus.</li> <li>Maintaining custom Unreal Engine 4 + NVidia PhysX 4 for robotics applications.</li> </ul>			
<b>Simbotic</b>	<a href="https://simbotic.ai/">https://simbotic.ai/</a>	<b>Open Source Developer</b>	<b>2019-</b>
<ul style="list-style-type: none"> <li>Leading development of open source simulation and AI platform for bridging the reality gap.</li> <li>Working on real time pipelines for generating synthetic data for training AI models.</li> <li>Integrating physics-based dynamics and computer vision into game engines.</li> <li>Improving sample efficiency of reinforcement learning models with rich virtual environments with dense rewards.</li> <li>Maintaining several docker containers for CUDA, ROS, GStreamer and TensorFlow.</li> </ul>			
<b>Civil Maps</b>	<a href="https://civilmaps.com/">https://civilmaps.com/</a>	<b>Simulation Consultant</b>	<b>2017-2019</b>
<b>Velodyne</b>	<a href="https://velodynelidar.com/">https://velodynelidar.com/</a>		
<b>Galois</b>	<a href="https://galois.com/">https://galois.com/</a>		
<ul style="list-style-type: none"> <li>Sensor characterization, customization and visualization tools.</li> <li>Integration of Unreal Engine into development operations.</li> <li>Massive autonomous swarming simulation architecture for DARPA, DoD and similar agencies.</li> </ul>			
<b>Red Pill VR</b>	<a href="http://redpillvr.com/">http://redpillvr.com/</a>	<b>Systems Engineer &amp; Technical Art</b>	<b>2016-2017</b>
<ul style="list-style-type: none"> <li>Integrated real time deep learning inference for VR Music MMO game using TensorFlow, GStreamer and UE4.</li> <li>Physics-based VR gameplay, UX interaction and full-body VR networking.</li> </ul>			
<b>Rawbots</b>	<a href="https://rawbots.github.io/">https://rawbots.github.io/</a>	<b>Indie Game Developer</b>	<b>2015-2016</b>
<ul style="list-style-type: none"> <li>Designed and develop Rawbots, a robot crafting sandbox game. Robot simulations developed with Bullet Physics.</li> </ul>			
<b>LucasArts &amp; ILM</b>	<a href="https://www.lucasfilm.com/">https://www.lucasfilm.com/</a>	<b>AAA Game Developer</b>	<b>2005-2015</b>
<b>MunkyFun</b>	<a href="https://www.munkyfun.com/">https://www.munkyfun.com/</a>		
<b>Beyond Games</b>	<a href="https://www.beyondgames.co/">https://www.beyondgames.co/</a>		
<ul style="list-style-type: none"> <li>Console game developer for Xbox, PlayStation, Nintendo, PC, iOS and Android.</li> <li>Gameplay, physics and network developer for multiple titles, most notable Star Wars: The Force Unleashed.</li> </ul>			

## Skills

C • C++ • Rust	ROS • PX4	Console • PC • Mobile	Git • Github • Gitlab
F# • C#	TensorFlow GPU	OpenGL • CUDA • GLSL	Win • Linux • Android • iOS
Python	GStreamer	THREE.js • A-Frame	Docker • AWS • GCP
Type/JavaScript	UnrealEngine • Unity3D	ArrayFire	TCP UDP WebRTC WebSockets
Erlang	Bullet Physics • PhysX	Nvidia Xavier/Jetson	Make • CMake • Bazel