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Alex Rozgo
Simulation and AI Engineer

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Experience

Unity 3D Engine	• 10+ years	• PC/Mobile development	**C/C++**	• 20+ years	• High perf systems, blockchains
Unreal Engine	• 10+ years	• Simulation development	**Rust**	• 10+ years	• Blockchain, AI, simulation
Computer Vision	• 10+ years	• AI/ML, rendering development	**Python**	• 20+ years	• Tools and pipeline engineering
GPGPU/CUDA	• 10+ years	• High performance computing	**F#/C#**	• 10+ years	• Apps, games and tools

Employment

Defense   AI Simulation Engineer   2018-
- Developing synthetic datasets for training ML models and virtual environments for training robots.
- Developing scalable simulation systems for robot swarms using Unreal Engine, PX4, ROS (Robot Operating System)
- Engineering autonomous AI agents for tactical mission planning, scenario generation, and CONOPS environments.

Vertex Studio   https://vertexstudio.co/   Applied R&D   2016-
- Developing deep learning pipelines using PyTorch, 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	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	LLMs • Vision	TCP UDP WebRTC WebSockets
Erlang	Bullet Physics • PhysX	NVidia Xavier/Jetson	Make • CMake • Bazel