Ian Rios

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ABOUT

Curiosity pulls me in. Impact keeps me grounded. I am a technologist who moves through opacity, not around it. From self-driving cars to augmented reality, I build toward possibilities not yet fully seen but already taking shape. Let's have fun creating the future together.

EXPERIENCE

Senior Computer Vision Engineer @ Niantic Labs (Acquired by Scopely) March 2020 – April 2025

*For half a decade, I **led the productization of cutting-edge research** by gaining in-depth technical expertise, **expanding** the technology, **integrating** it with real use cases in mind, and **planning** a roadmap for its technical improvement based on cross-collaboration with product, UX, and research. My work successfully launched **augmented reality features in Pokémon Go** for **millions of users**, multiple third-party games through our AR SDK, and various **spatial computing** enterprise projects.*

• Became technical owner of client-side of Niantic's **Visual Positioning System (VPS)**, which included directing its development, implementing and debugging probabilistic graph algorithms to run on-device, leveraging spatial computing cloud services, identifying engineering trade-offs, writing enterprise integration proposals, and scoping multi-year plans.

• Architectured real-time edge neural inference systems from the ground up, solving complex technical problems that require domain knowledge of computer vision, math, and deep learning. This allowed cross-platform deployment, including cutting-edge AR headsets.

• Applied LoRA to Learning-Based Relocalizer in an exploratory effort towards Large 3D Foundation Models

• To gain deep insights and aid decision-making, I designed and implemented evaluation, visualization, and testing systems to help us understand the complex interactions of computer vision algorithms, neural networks, multi-sensor data, hardware, and user behavior. I also guided cross-functional studies and experiments (e.g., the Large Space Navigation Drift study).

• Established vision for the team, managed interns, and mentored coworkers. Also, I participated in a research study group that re-implemented the latest transformer-based papers like MAST3R.

Computer Vision Engineer @ 6D.AI (Acquired by Niantic Labs) April 2018 – March 2020

As the fourth employee, I enjoyed wearing many hats and moving fast. I worked closely with Oxford University's Active Vision Lab to create one of the world's first SDKs for real-time 3D reconstruction and Persistent Augmented Reality.

• Trained and optimized a CNN for fast monocular depth estimation that allowed the deployment of real-time occlusions in low-end mobile phones

• Refactored training code from Caffe to **PyTorch** and **TensorFlow**, and onboarded the first Deep Learning engineers

• Developed a **C++** orchestrator for computer vision algorithms and designed C APIs for multi-language integration.

• Designed and implemented **SLAM** data pipelines and validation for sensor data (image, tracking poses, intrinsics)

• Wrote GPU kernels and used Metal Compute Shaders to achieve high-performance computations

Research Engineer @ Civil Maps (Acquired by Luminar) Jan 2017 – April 2018

I started my career in the Self-Driving Car industry, creating city-scale, high-accuracy 3D Maps for autonomous vehicles

• Developed unique 3D depth identifiers for Mapping and Relocalization using deep learning hashing

• Implemented methods for correcting trajectory drift and sensor calibration using energy functions

• Collaborated with Ford Research and Innovation Center to develop and align evaluation metrics for absolute accuracy

Limited Partner @ Magic Fund Oct 2022 – Present

EDUCATION

Mechanical Engineering @ University of Michigan, Ann Arbor Bachelor of Science in Engineering (Magna Cum Laude, 2017)