

NEWTON CAZZARO

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PROFESSIONAL SUMMARY

Senior Systems Software Engineer with 10+ years of experience architecting production-grade systems, specializing in **3D Computer Vision, Neural Reconstruction, and GPU-accelerated pipelines**. Proven expertise in bridging the gap between research (3DGS, NeRF) and production by building scalable tools in **Python, PyTorch, C++, and CUDA**. Passionate about developing high-fidelity 3D scene representations from sparse multi-view data and deploying them into real-time interactive environments.

TECHNICAL SKILLS

Languages: Python, C++, CUDA, PHP, JavaScript/TypeScript, SQL, Bash

AI & Computer Vision: PyTorch, 3D Gaussian Splatting (3DGS), NeRF Pipelines, Multi-view Geometry, OpenCV

Graphics & Visualization: WebGL 2.0, Three.js, OpenGL, Real-time Rendering, Shader Programming

Systems & Cloud: Linux/Unix, AWS (EC2, S3, Lambda), Docker, CI/CD, Git, High-Performance Computing (HPC)

Spoken Languages: Fluent in English, Portuguese, and Spanish.

RELEVANT PROJECTS: 3D VISION & NEURAL RECONSTRUCTION

Neural 3D Scene Reconstruction Engine

Lead Engineer & Researcher

Python, PyTorch, CUDA, WebGL

Personal Project

- Engineered a high-fidelity 3D scene representation pipeline capable of ingesting sparse multi-view image data to generate photorealistic 3D models.
- Implemented **3D Gaussian Splatting (3DGS)** algorithms using **PyTorch** and **CUDA** kernels to optimize training times and rendering performance.
- Developed a custom viewer using **WebGL 2.0** to render neural reconstruction outputs in real-time browsers, bridging heavy GPU compute with accessible client-side visualization.
- Optimized memory usage for geometry and appearance data, enabling semantic scene understanding within production constraints.

INDYCAR Real-Time 3D Visualization

Lead Architect

Three.js, React, AWS

NTT DATA

- Architected a real-time 3D visualization platform processing telemetry data to render high-fidelity digital twins of race environments.
- Built optimized rendering pipelines to handle complex geometry and scene graphs in a web-based environment.

PROFESSIONAL EXPERIENCE

NTT DATA

Senior Digital Solutions Consultant - Systems Software Engineer / Innovation Lead

Remote / Plano, TX

May 2023 – Present

- Neural Reconstruction Implementation:** Led the R&D and implementation of internal prototypes utilizing Neural Radiance Fields and Gaussian Splatting for spatial computing applications.
- Pipeline Engineering:** Designed and deployed Python-based AI processing services that automate the ingestion of raw data into training workflows for computer vision models.
- System Architecture:** Architected the Innovation Center's software delivery backbone, handling secure asset distribution, versioning, and containerized deployment (Docker/AWS) for internal engineering teams.
- Tool Development:** Built internal CLI tools and APIs to streamline the training, evaluation, and inference steps for deploying vision models into client-facing demonstrations.
- Collaborated with cross-functional research teams to translate experimental deep learning models into stable, production-ready software solutions.

NTT DATA

Technical Solutions Architect

Remote / Plano, TX

Oct 2020 – May 2023

- Designed and built a custom Content Management System (CMS) from the ground up to manage large-scale software assets and binary distribution.

- Engineered the backend infrastructure using AWS (S3, RDS, CloudFront), implementing robust security policies (IAM, VPC) and high-availability patterns.
- Developed automated ETL pipelines in Python to process metadata and analytics, enabling data-driven decision-making for product teams.
- Standardized DevOps practices, introducing CI/CD pipelines to automate testing and deployment, significantly reducing release cycles.

Nevada Corporate Headquarters*Senior Full Stack Engineer**Las Vegas, NV**Jan 2019 – Oct 2020*

- Architected a distributed cloud platform serving 50,000+ users, utilizing a hybrid architecture of Python services and Laravel/PHP endpoints.
- Built high-throughput data ingestion pipelines (Python) to collect, normalize, and synchronize millions of external records into internal CRM and analytics systems.
- Optimized complex SQL queries and database schemas (PostgreSQL) to improve system latency and handle concurrent data processing loads.
- Developed and maintained Linux-based server environments, handling system tuning, security patches, and resource monitoring.

Adobe Communications*Software Engineer**Las Vegas, NV**Jun 2016 – Jan 2019*

- Built and maintained mission-critical internal operational platforms, handling sensitive financial data processing and payroll workflows.
- Implemented secure backend services using Python and PHP, ensuring compliance with strict data security standards.
- Managed AWS cloud infrastructure, including DNS configuration, SSL/TLS termination, and load balancing.

EDUCATION

- **B.S. Computer Science** | University of Nevada, Las Vegas (UNLV)

CERTIFICATIONS

- AWS Certified Cloud Practitioner (CLF-C02)
- AWS Certified Solutions Architect — Professional (SAP-C02) (In Progress)

LEADERSHIP

- NTT Leadership Acceleration Program (LAP) — 3 years as an alumni coach for NTT's Executive Leadership Course