Andrés Millán Muñoz

DEVOPS · MATHEMATICIAN

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Skills

Statistics	Monte Carlo methods for light transport simulation
Programming languages	Python, Rust, Java, C++, Javascript, Ruby, R, Julia, Sage, Maxima, GLSL, SQL
DevOps	Git, Docker, Tailscale, CI/CD (Github Actions and Pages), Nix, infrastructure as code
Backend	Traefik, Nginx, Adguard, FastAPI, Java Spring
Frontend	Astro, Tailwind
Documentation and agile toolkit	Markdown, LaTeX, Confluence, Jira
Software	Visual Studio Code, Omniverse, Figma, Unity, Jupyter notebooks
Languages	Spanish (native), English (fluent), French (beginner)

Work experience

T-Systems Iberia - BMW

Granada

SOFTWARE DEVELOPER & DEVOPS

October 2022 - Today

- Member of multiple teams at BMW's Smart Factory Life Planning international project — a state-of-the-art enterprise solution to virtualize factories and their ecosystem, making them fully interactive in a 3D environment using Nvidia's Omniverse.
- Designed and implemented a Python-based REST-API server for migrating a legacy system into SW8P.
- Implemented extensions Nvidia's Omniverse main renderer —USD explorer— with tasks related to user interface, user experience and engine behavior.
- Maintained a Rust library for Omniverse which acts as a resolver, integrating legacy backends into the Omniverse ecosystem.
- Designed and implemented CI/CD pipelines and containerization for several applications using Github Actions.
- Deployed backends to the Azure Kubernetes cluster using Helm, migrating from on premise servers.

Projects

Real time ray tracing — Theory, and GPU-based implementation using Monte Carlo techniques

Granada, Spain

GITHUB.COM/ASMILEX/RAYTRACING

June 2021 - July 2022

- Thesis of the Bachelor's Degree in Computer Engineering and Mathematics.
- Implemented a Vulkan path tracing engine based on Monte Carlo integration using Nvidia DesignWorks' Nvpro-samples library. The engine is hardware accelerated on modern Nvidia's RTX GPUs. The project was inspired by Ray Tracing In One Weekend series
- Analyzed the quality of the image in terms of rendering time and noise of the reconstruction.
- Designed and implemented a CI/CD system to build and deploy the documentation of the thesis. Based on Github Actions and custom Docker container images.

Homelab

A SMALL PERSONAL SERVER

December 2022

- Docker compose-based personal homelab server running on RHEL9 used by multiple users.
- self-hosted services for personal use: SFTP and SMB server, monitoring (Dozzle, Portainer, Uptime Kuma), URL shortener (golinks), photograph storage (Immich), backups (Restic), remote development (Vscode server), S3 object storage (Minio)
- Secured using a VPN (Tailscale), with requests handled by load balancing (Traefik) and inward-facing DNS (Adguard)

CherryTrip - UX Case Study

Granada, Spain

ASMILEX.GITHUB.IO/DIU21

March 2021 - May 2021

- Analyzed, designed and mocked up an application for traveling in Granada for the pandemic era
- Deployed the result to Github Pages
- Used Figma to design the mockups

Crystalshot

Jaén, Spain

GITHUB.COM/ASMILEX/CRYSTALSHOT

June 2020

- A little arcade game about crystals made for a homemade gamejam.
- Developed using Unity. Multiplayer for up to 4 players.

Education

Mathematics and Computer Engineer bachelor's degree *Granada, Spain*

Granada University *September 2017 - June 2022*

Advanced C1 *Jaén, Spain*

Cambridge University Press & Assessment English *July 2017*