Roberto (André) Mossi Milla

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SUMMARY

Software Engineer with a B.S. in Computer Science, experienced in computer vision systems, artificial intelligence research, and real-time simulation systems and full-stack platforms. Background includes industry collaboration, academic publication, and end-to-end system design.

WORK EXPERIENCE

Dinant, Tegucigalpa, Honduras

Full-Stack Developer, June - July 2023

- Led the end-to-end design and development of two production web platforms, conducting requirements gathering, system planning, database architecture design, client presentations, and final deployment.[2]
- Architected and implemented a contract lifecycle management system for a device sales, rental, and repair company. Designed relational SQL schemas to track device state (sold, rented, under repair, returned), service eligibility, country-based filtering, and client records across multiple regions.
- Developed a multi-role web application (Oracle APEX, JavaScript, HTML, CSS) enabling guest contract signing, digital signature capture, automated PDF generation, and administrative dashboards with advanced filtering by date, country, device state, and contract status.
- Engineered a repair workflow system with state transitions, damage logging, cost tracking, time tracking, and daily activity reports to ensure accountability and operational transparency.
- Built a factory maintenance management platform enabling real-time machine status reporting, staged maintenance workflows, automated notifications, repair logs, and material usage tracking with automatic inventory deduction and procurement insight reporting.
- Collaborated directly with international stakeholders, conducted iterative demos, incorporated production feedback, and deployed finalized systems used by operational teams.

Gannon University, Pennsylvania, United States

Computer Vision Engineer (Project-Based) Industry Partner (NDA), August 2024 - May 2025

- Architected and deployed a real-time industrial traceability system using Ultralytics YOLO to detect and track pallets, automatically generating structured events with images and detection metadata.[4]
- Collaborated in a cross-functional team contributing across hardware, backend, and software components; took primary ownership of the monitoring dashboard and visualization interface.
- Developed a full-stack web dashboard (React, JavaScript) integrated with backend services and TimescaleDB to visualize detection events, images, and operational analytics in real time.
- Implemented administrative tools within the dashboard to delete images, correct detections, and curate labeled datasets used for iterative object detection model retraining, improving dataset quality and system reliability.
- Engineered an event-driven pipeline that synchronized frame capture with detection metadata, enabling downstream anomaly and damage analysis workflows.
- Delivered recurring technical presentations and system demonstrations to industry stakeholders and internal reviewers, supporting continued project funding and informing architectural decisions, including migration to NVIDIA Jetson hardware for improved performance and thermal stability.
- Containerized distributed services using Docker and integrated multi-language components (C++, Python, Rust) to coordinate inference, data processing, and system communication.

Research Assistant, August 2024 - May 2025

- Conducted research under faculty supervision on multi-agent artificial intelligence simulating natural selection and survival behaviors in dynamic environments.[8]
- Implemented NeuroEvolution of Augmenting Topologies (NEAT) to evolve neural network architectures and behavioral strategies across generations.
- Developed a 3D multi-agent simulation environment in Unreal Engine featuring procedural world generation, physics-based interactions, and reinforcement learning pipelines using C++, CUDA, and PyTorch.
- Research paper accepted and published by the American Society for Engineering Education (ASEE) and presented at a Sigma Xi conference at Penn State University.[5] [3]

Teacher Assistant, August - December 2024

- Volunteered as a Teaching Assistant, supporting students by answering questions, clarifying concepts, and reinforcing course material during class sessions.

Student Technician, August - December 2022

- Worked at the IT department of the university. Was responsible for giving assistance in technology related issues to students and professors 5 days a week.

EDUCATION

Gannon University, Pennsylvania, United States

Bachelor of Science in Computer Systems Engineering, May 2025[9]

Harvard University, Online

CS50's Introduction to Computer Science, December 2022[10]

Extreme Networks, Online

Introduction to Future Networks, May 2022[1]

PUBLICATIONS

- Mossi, R. A. — "Tag AI-Sandbox," Proceedings of the ASEE Annual Conference, 2025 (peer-reviewed)..[5]

ADDITIONAL SKILLS

- Proficient in PowerShell, Bash, and Neovim.
- Experience developing and deploying web applications using React, Next.js, Vite, and Vercel.
- Intermediate level of C++.
- Experience with build automation and scripting using CMake, Bash, PowerShell, and fish.
- Configured and customized Linux environments to deepen understanding of operating systems and low-level system behavior.
- Written and oral fluency in Spanish and English.
- Written and oral intermediate in Japanese

QUALIFICATIONS SUMMARY

- 3 years of experience in Windows PowerShell.
- 3 years of experience making games in Unreal Engine.
- 1 year of experience debugging software using Visual Studio, IntelliJ, Neovim, and VSCode.
- 1 year of experience developing software in C++.
- 5 months of experience developing web apps in JavaScript, HTML, and CSS.
- 3 months of experience developing software in Java, Python, C#, and C.
- 2 months of experience developing large scale cloud services.
- 2 months of experience working with Oracle and Oracle Apex.
- 2 months of experience developing websites in NodeJS, React, and Next.js.

AWARDS AND HONORS

- "School Development Award" award obtained for outstanding development of a videogame using Blueprints in Unreal Engine 4, 2020[7]
- "School Development Award" award obtained for outstanding development of a videogame using C++ and Unreal Engine 4, 2016[6]

REFERENCES

[1] Extreme Academy. *Extreme Networks Certification*. Dec. 1, 2022. URL: https://andremossi.vercel.app/experiences/extreme (visited on 02/15/2026).

[2] Rigoberto Funes. *Dinant Recommendation Letter*. Feb. 11, 2026. URL: https://andremossi.vercel.app/PDF/Recommendations/dinant.pdf (visited on 02/15/2026).

[3] lah585. *Tag AI-Sandbox Presentation*. Sigma Xi. Mar. 11, 2025. URL: https://sites.psu.edu/behrendsigmaxi2025/2025/03/11/tag-ai-sandbox/ (visited on 02/15/2026).

[4] Andre Mossi. *Computer Vision Project*. Feb. 15, 2026. URL: https://andremossi.vercel.app/experiences/traceability (visited on 02/15/2026).

[5] Roberto Andre Mossi and Ramakrishnan Sundaram. "Tag AI-Sandbox Paper". In: *2025 ASEE North Central Section (NCS) Annual Conference*. 10.18260/1-2–54692. Marshall University, Huntington, West Virginia: ASEE Conferences, Mar. 2025. URL: https://peer.asee.org/54692.

[6] Dowal School. *Software Engineer 2016 Award*. May 12, 2016. URL: https://andremossi.vercel.app/experiences/dowal2016 (visited on 02/15/2026).

[7] Dowal School. *Software Engineer 2020 Award*. May 12, 2020. URL: https://andremossi.vercel.app/experiences/dowal2020 (visited on 02/15/2026).

[8] Ram Sundaram. *Tag AI-Sandbox Recommendation Letter*. Feb. 20, 2025. URL: https://andremossi.vercel.app/PDF/Recommendations/ai-sandbox.pdf (visited on 02/15/2026).

[9] Gannon University. *Gannon University BS Diploma*. May 10, 2025. URL: https://andremossi.vercel.app/experiences/gannon (visited on 02/15/2026).

[10] Harvard University. *Harvard CS50 Certification*. Dec. 20, 2022. URL: https://andremossi.vercel.app/experiences/harvard (visited on 02/15/2026).