Santiago Fuentes

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Skills

- Programming Languages: JavaScript, TypeScript, Python, SQL, C/C++, Java
- Frontend & Backend Development: React Redux, HTML, CSS, Node.js, Express, Django, Flask
- Version Control: Git (GitHub, GitLab, Gitea, Google Cloud Repositories)
- Cloud & DevOps: Docker, Google Cloud (GCP), AWS (EC2, S3, Lambda)
- CI/CD & Automation: Ansible, Woodpecker CI, GitHub Actions, Cloud Build
- Databases: MySQL, Redis
- System Administration: Linux (Fedora, Ubuntu), Shell Scripting
- Networking & Security: Traefik, Nginx, Tailscale
- Languages: Spanish (Native Proficiency), English (Professional Proficiency)

Education

Bachelor of Science in **Software Engineering**   Expected to graduate in *April 2026*.
Schulich School of Engineering, University of Calgary | Calgary, Alberta

Experience

Software Engineer Intern, *I2Sense Laboratory; University of Calgary, September 2023 – Present*

Primarily supported the lab's research through the development of internal software tools and infrastructure, with some involvement in research workflows.

- Compiled and optimized the Linux kernel for a custom All Winner F1C200s hardware board using Buildroot, enhancing system stability and optimizing the kernel for the research use case.
- Created automated scripts to facilitate deployments via Google Artifact Registry; ensured superior reliability, reducing downtime by 50% during upgrades and maintenance windows.
- Implemented Docker-based containerization strategies to optimize performance for web applications built on React and Express frameworks, reducing costs by 10%.
- Facilitated real-time research data insights and reporting for six team members by implementing web analytics and PDF report generation using Django.
- Authored SQL schema architectures for research data management, emphasizing hierarchical organization and seamless data integration, reducing system technical debt.
- Streamlined deployment of web applications using Ansible in conjunction with Portainer, leveraging Traefik for reverse proxy management and TLS certification, reducing server deployment time.
- Managed a Unix Ubuntu server for Docker web services with Portainer, providing non-technical team members with clear documentation and training, simplifying system monitoring.

Technical Projects & Publications

Atkin, D., Fuentes, S., & Yadid-Pecht, O. (2025). Women in Entrepreneurship: Effective Strategies for Online Training and Development. International Journal of Innovative Business Strategies, 11(1), 782–789.
https://doi.org/10.20533/ijibs.2046.3626.2025.0096

Job Tracker, *October 2024 – Present*

- Designed a user-friendly job tracking application utilizing React Redux, Express server, and MySQL; streamlined personal job application workflow to save 5+ hours per month.
- Implemented GitHub Actions for CI/CD automation and creation of tailored Docker images, ensuring seamless integration and saving development workflow times by 20%.
- Deployed the application on a self-hosted TrueNAS server, with proper security TLS best practices.

Home Lab Infrastructure using TrueNAS, *August 2024 – Present*

- Established and managed a sophisticated TrueNAS based home lab that hosts multiple containerized applications, ensuring seamless internal and external domain name connections with TLS encryption for enhanced security.
- Configured and optimized services such as Pi-hole for network-wide ad blocking, personally developed apps, and database services with MySQL for persistent storage and other open source apps.
- Optimized performance and storage by configuring proper RAIDZ1 vdev for the array and mirrored SSD vdev with proper disk spin-down policies, and memory limits within the server three most important services for efficient resource utilization, with automated backups.