

FRANCO SILVESTRI

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EDUCATION

Florida International University

B.S. in Computer Science, Minor in Mathematical Sciences | GPA: 3.95/4.00 | Honors College

Accelerated B.S./M.S. in Computer Science | M.S. expected

Relevant coursework: Data Structures & Algorithms, Advanced Databases, Machine Learning, Artificial Intelligence

First-author poster, FIU Undergraduate Research Conference 2026: real-time mercury characterization with mobile robots

Miami, FL, USA

Aug 2023 - May 2027

Aug 2027 - May 2028

TECHNICAL SKILLS

Languages: Python, C++, Java, JavaScript/TypeScript, SQL

Systems and Backend: Distributed Systems, Real-Time Systems, Networking, ROS 2, DDS Middleware, Django REST, PostgreSQL

Infrastructure and DevOps: Docker, Kubernetes, GitLab CI, Jenkins, Linux, AWS

ML and Perception: PyTorch, GPyTorch, CUDA, TensorRT, Jetson, Semantic Segmentation, SLAM, Nav2, Sensor Fusion

EXPERIENCE

Robotics Research Assistant, Perception and Systems Lead

Jan 2024 - Present

FIU Applied Research Center | DOE MSIPP project with Savannah River National Lab and Oak Ridge Y-12 | Miami, FL, USA

- Designed a sensor-agnostic, modular ROS 2 node architecture so new sensors integrate without touching downstream navigation, mapping, or visualization, enabling deployment across multiple robotic platforms.
- Cut real-time inference latency 22x over a PyTorch GPU baseline (CUDA, quantization, TensorRT) for a semantic-segmentation pipeline on a Boston Dynamics SPOT, sharing one Jetson Orin Nano GPU with a Gaussian Process; fine-tuned DeepLabV3+/STEGO to a maximum of 72% mIoU across 21 navigation-critical classes.
- Built distributed ROS 2 components in C++/Python and designed the robot's networking from scratch (IP addressing, low-level Linux, DDS tuning, traffic prioritization), sustaining concurrent lidar, SLAM, inference, and AR streams across the system.
- Designed a multi-sensor fusion pipeline in C++ merging Velodyne lidar with six onboard depth cameras into a unified point cloud through calibrated transforms; implemented SLAM with Nav2 planning and open-frontier exploration of unknown environments.
- Built an online Gaussian Process regression node (GPyTorch, CUDA) exposing feed and predict ROS 2 services, fine-tuned to a live CO2 proxy sensor validating the contaminant-mapping pipeline, fused with SLAM odometry into real-time maps with uncertainty.

Genworth Financial, IT Development Program Intern

Summers 2025 and 2026

Richmond, VA, USA | Returning intern, second consecutive term

Platform Engineering and DevOps Role, Architecture Team

May 2026 – Aug 2026

- Built and standardized end-to-end CI/CD pipelines for 80+ applications across a 110+ system enterprise portfolio using reusable GitLab CI templates for React, Angular, Node, and Java workloads.
- Raised the portfolio's average internal DevOps Adoption score from 39 to 75 by integrating security gates, artifact promotion, and automated deployment, achieving the highest company-wide score among teams with comparably large portfolios.
- Integrated automated security gates into every pipeline (SAST, DAST, dependency scanning), reverse-engineering each application to understand authentication structure (permissions, tokens, protected routes) so dynamic scans could run against secured endpoints.
- Automated artifact promotion and deployment to servers with Jenkins; containerized workloads with Docker and tuned Kubernetes pod resource allocation, partnering with each application's developers and architecture leadership on the right approach per system.

Application Development Role, IT Sourcing and Supply Management Team

May 2025 - Aug 2025

- Owned an enterprise supplier-feedback product through the full development cycle on Microsoft Power Platform: requirements, data architecture, build, enterprise security and compliance review, release, and knowledge transfer.
- Replaced manual Outlook tracking and 100+ per-supplier Excel workbooks for a 50+ person department; centralized analytics and automated reminders cut feedback collection from hours to minutes.

PROJECTS

Formira, Pharmacy Quoting and Compliance SaaS, Co-founder and Sole Backend Engineer

Feb 2023 - Present

- Sole backend engineer on a 2-person team, owning architecture, implementation, testing, and deploy readiness (Python, Django REST, PostgreSQL, Docker, CI/CD with automated migrations and health-gated rollouts); 11 domain modules with a database-free core for exact-Decimal financial math and immutable quote snapshots; preparing pilot launch.
- Designed a 5-layer authorization pipeline: tenant isolation, plan entitlement gating, capability-based RBAC, state-machine transition guards, and field-level redaction of sensitive pricing, all enforced through one central hook so no endpoint can bypass it.
- Architected an append-only audit event store as the system of record for all state changes, with reporting and compliance implemented as read-only projections that never modify domain tables.
- Built a 2,900-test suite across unit, integration, and end-to-end levels, including a generated role by endpoint by method RBAC matrix that fails CI when any endpoint ships without a classified capability, preventing authorization drift.

LEADERSHIP

INIT FIU, Robotics Technical Lead, E-Board

Jan 2025 - Present

Led 16+ embedded systems and robotics workshops ([video playlist](#)); co-organized ShellHacks, Florida's largest hackathon

Panther Robotics, Software Team Lead

Aug 2023 - Dec 2024

Led a 7-member team exploring reinforcement learning for robotic arm control in simulation (Keras, PyBullet, Isaac Sim)