

Daniel Silva

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PROFILE

Software Engineering student at SDU with a focus on platform engineering and applied AI. I learn by building: I run a two-node Kubernetes homelab managed with GitOps, contribute to research on emergent communication in multi-agent simulations, and take on leadership and operational roles in student life. Comfortable across the stack — from Linux and distributed systems to Python, C#, and the practice of writing things down so others can follow. Drawn to problems where infrastructure, AI, and real-world impact meet.



EDUCATION

- BSc in Software Engineering** 2025 - Present
University of Southern Denmark
- Recent Grades: 12 in Computer System, 12 in Object Oriented Programming, 10 in Mathematics for Science
- CS50x: Introduction to Computer Science** 2024 - 2025
Harvardx
- Completed CS50's curriculum focused on low level programming and general Computer Science concepts
- Sciences & Technologies Secondary Course** 2022 - 2025
Escola Secundária António Damásio
- Grade: 17/20 (Portuguese Grading System)

PROJECTS

- Kubernetes Homelab | Personal Project** [GitHub](#)
- Built a two-node bare-metal K3s cluster on recycled laptops, managed end-to-end via GitOps with Flux CD v2 — every change deployed from a single Git repository.
 - Operates a three-node CloudNativePG Postgres cluster, NGINX Ingress, MetalLB (L2), and SOPS with age encryption for secrets in Git.
 - Documented real operational problems and their fixes (Flux dependency ordering, Kubernetes Job immutability, OAuth token expiry) in a structured engineering journal.

Emergent Communication in Multi-Agent Simulations | Research, SDU

- Collaborating with an SDU professor on a reinforcement-learning simulation exploring how dolphin-like communication could emerge between agents under selective pressure.
- Working in Python with the Mesa agent-based modelling framework; contributing to environment design, agent architecture, and experiment tracking.

- Team of six built a multi-agent system that replaces static AI-project intake forms with a dynamic chat, guiding Danfoss employees from rough idea to a structured, AI implementation-ready epic.
- Contributed to the backend alongside two master's students — proposing and implementing improvements to the LangGraph orchestration, the dynamic agent registry (Markdown-defined agents with Pydantic schemas), and the FAISS-backed RAG layer over Danfoss policy PDFs. All models ran locally on Ollama.
- Worked effectively with AI coding tools as part of the team's workflow. The case owner took the prototype to their manager to explore internal adoption.

EXPERIENCE & INVOLVEMENT

Fellow, Sentient Futures AI × Animals Fellowship 2026

- Selected for an 8-week cohort exploring how AI can be applied to problems in animal welfare and non-human sentience.
- Engaging with researchers and practitioners across ML, philosophy, and animal advocacy.

Treasurer, Student Council — University of Southern Denmark 2026 – Present

- Elected to oversee the council's finances, including budgeting, tracking, and reporting for student activities.
- Balancing the role alongside full-time studies and research — a practical exercise in prioritisation and structured follow-through.

Participant & AV Volunteer at EAGxNordics 2026 2025 – Present

- Attending EAGxNordics to connect with researchers and organisations working on AI safety and high-impact careers.
- Part of the AV team of volunteers in charge of the audio visual setup in the talks.

Bartender, Caféen — SDU Sønderborg Friday Bar 2025 – Present

- Run weekly events with the team: logistics, service, technical fixes, and cleanup.
- Steady practice in teamwork and composure in a fast, loud environment.

Competitive Athlete — Football & Judo 2011 – 2025

- Fourteen years of national-level competition taught me consistency, performance under pressure, and how to take feedback without flinching.

SKILLS

Languages	Python, C#, C, SQL, Bash
Infrastructure	Kubernetes (K3s), Docker, Flux CD, GitOps, CloudNativePG, NGINX, MetalLB, SOPS
Systems & Tools	Linux (Fedora), Git, PostgreSQL, Networking fundamentals
AI & Data	LangGraph, RAG, Ollama, Mesa (agent-based modelling), reinforcement learning basics
Practice	Technical writing, structured documentation, end-to-end ownership

CERTIFICATIONS & PROGRAMMES

Sentient Futures	AI × Animals Fellowship (2026)
HarvardX	CS50x — Introduction to Computer Science (2025)
British Council	IELTS Academic — C1
Coursera	Work Smarter with Microsoft Excel

LANGUAGES

Portuguese	Native
English	Fluent — IELTS C1
Spanish	Intermediate
Danish	Beginner (learning)