Lucas de Paula
Software Engineer

Software engineer with 5+ years of experience building autonomous systems and real-time applications deployed in the field. Co-founded a drone tech startup used in wildfire detection and search & rescue missions across the world. Well-versed in C++ and Android UIs, with published research in AI-driven aerial robotics.

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PROFESSIONAL DEVELOPMENT

ROBOTTO CO. – Aalborg, Denmark   *Co-founder and Software Developer*   Feb 2019 - Oct 2024

- **FireAI (Autonomous Drone Missions)**
  - Built C++ backend for autonomous drones missions which detect wildfires using DJI M300 & NVIDIA Jetson.
  - Enabled early fire detection with 90+% average accuracy across diverse environments.

- **OmniSight (Search & Rescue System)**
  - Developed embedded C++ modules for autonomous navigation in complex terrains.
  - Integrated feedback from GRAF firefighters and WWF personnel to enhance usability.

- **Android Ground Control App (FireAI & OmniSight)**
  - Built a custom Android app for drone control and real-time telemetry visualization using Java.
  - Collected user feedback from field operators often shipping QoL updates.

- **TileElevation**
  - Engineered a real-time elevation map utility to prevent terrain collisions.
  - Adopted in all company missions, reducing crash risk during autonomous flight to nearly zero.

SKILLS

- **Languages:** C++, Java, Python, SQL, C#
- **Technologies:** OpenCV, JSON, XML, REST APIs
- **Tools:** Git, Docker, CMake, Gradle
- **Platforms:** Linux (Ubuntu, Fedora), NVIDIA Jetson, Android, Raspberry Pi
- **Practices:** Agile (Scrum/Kanban), CI/CD, Field Testing, UX Feedback Integration

EDUCATION

AALBORG UNIVERSITY – Aalborg, Denmark   *Bachelor of Robotics*   Aug 2016 – Aug 2019

- Focus: Control systems, autonomous navigation, human-robot interaction.
- Capstone: AI-based drone platform for wildfire mapping using monocular vision.

PERSONAL PROJECTS

TOUCHPAD VOLUME CONTROL
Developed a Fedora desktop utility to control volume via touchpad gestures using ALSA.

BUFF SNAKE (MULTIPLAYER GAME)
Created a gym-themed multiplayer Snake game featuring unique mechanics and "buffing" effects.

ADDITIONAL

PUBLICATIONS
- "Estimation of Wildfire Size and Location using a Monocular Camera on a Semi-Autonomous Quadcopter" ICVS (2019)
- "A Framework for Wildfire Inspection Using Deep Convolutional Neural Networks" SII (2020)

LANGUAGES

English | C2 (Fluent)   Portuguese | C2 (Native)   Spanish | B2 (Intermediate)   Danish | A1 (Basic)

VOLUNTEERING
- Cheetah Conservation Volunteer – South Africa, 2016