



André Costa

Date of birth: 09/09/2001 | **Place of birth:** Vila Nova de Famalicão, Portugal |

Nationality: Portuguese | **Gender:** Male | **Phone number:** (+351) 910295969 (Mobile) |

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ABOUT ME

Junior researcher in AI focusing on intelligent software, multimodal vision/language, and digital twins. Interested in nutrition/health, accessibility, and explainable decision-oriented models.

EDUCATION AND TRAINING

2020 – 2023 Portugal

B.S.C. IN GRAPHIC COMPUTING AND MULTIMEDIA ENGINEERING Polytechnic Institute of Viana do Castelo (IPVC)

2023 – 2025 Portugal

M.S.C. IN COMPUTER ENGINEERING Polytechnic Institute of Viana do Castelo (IPVC)

- Digital twin
- Industry 5.0
- Predictive maintenance
- Intelligent virtual assistant
- IoT
- Textile industry

Final grade 19/20 | **Thesis** Paradigm of the Digital Twin for Prediction and Assistance in Smart Factories

Link <http://hdl.handle.net/20.500.11960/4525>

PROJECTS

2023 – 2024

Digital Twin for Smart Factories

- Designed a modular, four-layer Digital Twin pipeline with bidirectional sync between a physical asset and its 3D twin; validated real-time sensing, control and predictive analytics in a controlled setup (“CoffeeTwin”).
- Implemented anomaly monitoring and predictive maintenance (time-series forecasting) with dashboards for live supervision; demonstrated proactive alerts and planning benefits.

2024 – 2025

Intelligent Virtual Assistant (RIA) integrated with the Digital Twin

- Built an assistant layer over the factory Digital Twin to support operators via natural-language queries (text/voice), live data look-ups and guided troubleshooting.
- Architected three operational modes — Maintenance (semantic Q&A over manuals + video tutorials), Prediction (historical analysis/anomaly detection), and Information (real-time KPIs).
- Orchestrated dialogue with a finite-state controller, error-tolerant command handling and robustness features (timeouts, session/history control, parallel tasks).
- Delivered a full web UI + REST backend (session management, chat/voice endpoints, interactive charts) and operator-centric UX.

Link <https://youtu.be/h5IBoluD3YU>

RESEARCH EXPERIENCE

2023 – CURRENT

Research Fellow — IPVC (Project TEXPACT)

TEXP@CT is a response to the challenge of digital transition and adaptation to Industry 4.0 in the textile and clothing sector.

Link <https://texpact.pt/>

● PUBLICATIONS

2025
Smart Maintenance Solutions: AR- and VR-Enhanced Digital Twin Powered by FIWARE

Journal Name: Sensors

2025
Manuscript under review - RIA : Intelligent Virtual Assistant for Industry 5.0

Journal Name: Applied Intelligence (Springer)

● SKILLS

AI & Data

computer vision | machine learning | large language models | natural language processing

Software & Data

Javascript | SQL | MongoDB | REST API | Python | Node.js | C# | React | Java

● LANGUAGE SKILLS

Mother tongue(s): **PORTUGUESE**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	B1	B2	A2	A2	A1