Alberto Coffrini

PhD Student in Artificial Intelligence · CNR-ISTI & University of Pisa

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Research Interests

Large and Small Language Models · Tool-calling agents · Natural Language Processing · Indoor localization and navigation · Assistive technologies

Education & Research Experience

Visiting PhD Researcher — Oct 2026 – Nov 2026
Trinity College Dublin — Dublin, Ireland

- Development of a benchmark for evaluating tool-calling capabilities of Small Language Models (SLMs).

PhD in Artificial Intelligence – National PhD Program in AI — Nov 2024 – Present
CNR-ISTI & Università di Pisa — Pisa, Italy

- Topic: AI-driven inclusive indoor localization and navigation systems for people with disabilities.

Research Scholarship — Sep 2024 – Nov 2024
Università degli Studi di Parma — Parma, Italy

MSc in Computer Science — 2021 – Mar 2024
Università degli Studi di Parma — Parma, Italy

- Final grade: 110/110 *cum laude*.
- Thesis: *Study and experimentation of an NLP-based educational game for medical students*.

Research Internship (abroad) — Mar 2023 – Jun 2023
Lund University — Lund, Sweden

- Natural Language Processing applications.

Research Scholarship — 2021 – 2022
Università degli Studi di Parma — Parma, Italy

BSc in Computer Science — 2017 – 2020
Università degli Studi di Parma — Parma, Italy

- Focus: Software Engineering, Artificial Intelligence, Algorithms and Data Structures, Numerical Methods; NLP as internship and thesis topic.

Scientific High School Diploma — 2012 – 2017
Istituto Zappa-Fermi — Borgo Val di Taro (PR), Italy

Publications

[1] **A. Coffrini**, P. Barsocchi, A. Crivello, F. Furfari, A. Ferrari. **Natural Language Indoor Navigation Using Small Language Models and Map Graphs.** *IPIN 2026*.

[2] D. Belli, P. Barsocchi, G. Lombardi, **A. Coffrini**, F. Furfari, A. Crivello. **Navigation Solutions for Blind and Visually Impaired Persons: A State-of-the-Art Survey.** *International Journal of Human–Computer Interaction*, 2026. DOI: 10.1080/10447318.2026.2643358.

[3] **A. Coffrini**, P. Barsocchi, A. Crivello, F. Furfari, A. Ferrari. **LLM-Guided Indoor Navigation with Multimodal Map Understanding.** *IPIN 2025*.

[4] **A. Coffrini**, S. Monica, F. Bergenti. **Preliminary Experiments on an Improved Artificial Player for a Word Association Game.** *NL4AI @ AI*IA 2021*.

[5] **A. Coffrini**, S. Monica, F. Bergenti. **On the Design of an Artificial Player for a Popular Word Game.** *CILC 2021*, pp. 122–132.

Talks

A solver for the TV quiz "La Ghigliottina" 2021
AILC – Lectures on Computational Linguistics (LCL 2021)

Professional Experience

Freelance Videomaker Aug 2015 – Present
Self-employed Parma, Italy

- Video production for companies, advertising content, weddings and events.

Videomaker (collaborator) Jun 2017 – Present
Video production team Parma, Italy

- Corporate and advertising video production within a team, covering multiple roles.

Skills

Programming	Python (ML & data science), Java, C, C++, Prolog
Tools	Linux terminal, PostgreSQL, MATLAB, Android Studio, Xcode, Eclipse, React Native
Systems	macOS, Linux, Android
Soft skills	Teamwork in research and production teams, time management, problem solving
Languages	Italian (native) · English (C1) · French (B1 comprehension, A2 speaking/writing)

Interests

Tennis, Scuba Diving and Powerlifting · Travelling · Tenor saxophone, acoustic and electric guitar · Driving licence A, B