Francesco Franco

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Education

University of Modena and Reggio Emilia,
Department of Physics, Informatics and Mathematics — Modena, Italy
PhD Student in Computer and Data Science for Technological and Social Innovation — *Nov 2025 — Present*

University of Modena and Reggio Emilia,
Department of Physics, Informatics and Mathematics — Modena, Italy
Master's Degree in Computer Science — *2020 — 2023*

University of Modena and Reggio Emilia,
Department of Physics, Informatics and Mathematics — Modena, Italy
Bachelor's Degree in Computer Science — *2016 — 2020*

Research Experience

Research fellow — Jan 2024 — Oct 2025
University of Urbino — *Urbino, Italy*
- "PRIN 2022" - SmartShires: research on decentralized data management systems. Contributions include the design and performance evaluation of IPFS-based architectures for health data exchange in rural and smart communities.

Research fellow — Jan 2023 — Dec 2024
University of Modena and Reggio Emilia — *Modena, Italy*
- The TEMPO project aims to explore the feasibility, acceptability, and sustainability of a telemedicine system and evaluate its efficacy in improving treatment adherence of patients with hemophilia. For this project, my task was to develop an Android application that monitors patients' physical activities and provides a tool for recording events related to hemophilia. prin-tempo.github.io

Teaching Experience

Tutor — Mar 2026 — Present
University of Modena and Reggio Emilia — *Modena, Italy*
- [MN1-1141] - Programmazione 2 (20hrs)

Adjunct Professor — Oct 2024 — Dec 2024
University of Modena and Reggio Emilia — *Modena, Italy*
- [M_270_005] - Physics and Informatics (60hrs)

Industry Experience

Android Developer — Dec 2025 — Feb 2026
Fondazione Luigi Villa — *Remote*
- Freelance contract - Development and maintenance of the mobile application for the project "TEMPO".

Software Developer — Feb 2020 — Sept 2020
Infolog — *Modena, Italy*
- Development of an application for real-time data exchange

Conferences & Talks

- **SCIoT: Design and Evaluation of a Split Computing Framework for Collaborative Inference in the IoT**
  IEEE CCNC 2026, Las Vegas, USA. *(Oral presentation)*
- **Evaluating Bluetooth Low Energy Connection Reliability for Mobile Health Applications**
  IEEE CCNC 2026, Las Vegas, USA. *(Oral presentation)*
- **Network Efficiency of Centralized and Decentralized Health Data Systems**
  IEEE CCNC 2026, Las Vegas, USA. *(Oral presentation)*

- **Decentralized Health Data Management: An IPFS-based Approach and Performance Evaluation**
  IEEE WETICE 2025, Catania, Italy. *(Oral presentation)*
- **Dynamic Machine Learning Models Management for Operator Digital Twins in Industry 5.0**
  IEEE WETICE 2025, Catania, Italy. *(Oral presentation)*

Publications

[1] F. Franco, L. Lamazzi, M. Picone, M. Savarese, C. \. Grazia, and L. Bedogni, "Customizing Human Machine Interfaces leveraging Digital Twins and Large Language Models," in *2026 IEEE 23rd Consumer Communications & Networking Conference (CCNC)*, 2026, pp. 1–6. doi: 10.1109/CCNC65079.2026.11366401.

[2] L. Lamazzi, J. W. Wang, F. Franco, and L. Bedogni, "SCIoT: Design and Evaluation of a Split Computing Framework for Collaborative Inference in the IoT," in *2026 IEEE 23rd Consumer Communications & Networking Conference (CCNC)*, 2026, pp. 1–6. doi: 10.1109/CCNC65079.2026.11366406.

[3] F. Franco, L. Lamazzi, F. Poggi, and L. Bedogni, "Evaluating Bluetooth Low Energy Connection Reliability for Mobile Health Applications," in *2026 IEEE 23rd Consumer Communications & Networking Conference (CCNC)*, 2026, pp. 1–6. doi: 10.1109/CCNC65079.2026.11366362.

[4] F. Franco, A. Bogliolo, S. Montagna, L. Bedogni, and S. Ferretti, "Network Efficiency of Centralized and Decentralized Health Data Systems," in *2026 IEEE 23rd Consumer Communications & Networking Conference (CCNC)*, 2026, pp. 1–5. doi: 10.1109/CCNC65079.2026.11366486.

[5] F. Franco, L. Lamazzi, F. Poggi, and L. Bedogni, "Toward Efficient Health Data Access for Mobile Applications Leveraging Human Digital Twins," in *2026 IEEE 23rd Consumer Communications & Networking Conference (CCNC)*, 2026, pp. 1–6. doi: 10.1109/CCNC65079.2026.11366443.

[6] L. Lamazzi, F. Franco, and L. Bedogni, "Toward Privacy-Aware Human Digital Twins: A Multi-Layer Architecture," *Future Generation Computer Systems*, p. 108263, 2025, doi: https://doi.org/10.1016/j.future.2025.108263.

[7] F. Franco, A. Bogliolo, S. Montagna, L. Bedogni, and S. Ferretti, "Decentralized Health Data Management: An IPFS-based Approach and Performance Evaluation," in *2025 33rd International Conference on Enabling Technologies: Infrastructure for Collaborative Enterprises (WETICE)*, 2025, pp. 1–5.

[8] L. Lamazzi, F. Franco, L. Bedogni, and M. Picone, "Dynamic Machine Learning Models Management for Operator Digital Twins in Industry 5.0," in *2025 33rd International Conference on Enabling Technologies: Infrastructure for Collaborative Enterprises (WETICE)*, 2025, pp. 1–6.

[9] L. Lamazzi, F. Franco, R. Morandi, M. Picone, and L. Bedogni, "Human in the Loop in Digital Twins Enabled Active Learning: A Proposed Architecture," in *2025 IEEE 22nd International Conference on Software Architecture Companion (ICSA-C)*, 2025, pp. 334–339.

[10] F. Franco, L. Lamazzi, and L. Bedogni, "A Multi-Layer architecture for Human Digital Twin," in *2025 IEEE International Conference on Pervasive Computing and Communications Workshops and other Affiliated Events (PerCom Workshops)*, 2025, pp. 122–127.

[11] A. Montanari, A. Marele, F. Franco, F. Poggi, and L. Bedogni, "Wearable Device Positioning for Activity Recognition and Monitoring," in *2024 IEEE Symposium on Computers and Communications (ISCC)*, 2024, pp. 1–6.

[12] R. Gualtierotti *et al.*, "Optimizing long-term joint health in the treatment of hemophilia," *Expert Review of Hematology*, pp. 1–10, 2024.

Skills

- **Programming Languages**: Android/Kotlin, Flutter, Dart, Python, C/C++, Java, Bash
- **Technologies**: Git, LaTeX, Typst, UNIX, Docker

Language Skills

- **Italian**: Native
- **English**: Professional working proficiency (B2)