Alessandro Gobbetti

ale.gobbetti.work@gmail.com alessandro-gobbetti.github.io
LinkedIn GitHub ORCID

Computer science graduate with a BSc (2023) and MSc (2025) from Università della Svizzera Italiana (USI), early stage research experience in machine learning, federated learning, and human activity recognition, well rounded technical skills across the CS spectrum, and experience in leading development projects.

Education

Master in Informatics
Università della Svizzera italiana (USI) *Sep. 2023 – Sep. 2025*

Advanced CS program combining theory and hands-on software engineering; interdisciplinary coursework, team projects, and project management with a focus on emerging technologies.

Bachelor in Informatics
Università della Svizzera italiana (USI) *Sep. 2020 – July 2023*

Comprehensive foundation in computer science fundamentals. Extensive hands-on experience through several team-based or individual software projects.

Relevant Coursework

- ML / Advanced Topics in ML
- CV & Pattern Recognition
- Image and Video Processing
- Computer Graphics
- Computational Fabrication
- Distributed Systems / Algorithms
- Edge Computing in the IoT
- Mobile & Wearable Computing
- Systems Programming / OS
- Data Analytics / Management
- High-Performance Computing
- Information Security
- Software Design & Modeling
- Adv. Computer Architectures
- Quantum Computing

Publications

My work resulted in academic publications on federated learning, human activity recognition, and privacy-aware machine learning for mobile and wearable devices.

FedMMA-HAR: Federated Learning for Human Activity Recognition With Missing Modalities Using Head-Worn Wearables
***A. Gobbetti**, M. Gjoreski, H. Gjoreski, N. Lane and M. Langheinrich*
IEEE Pervasive Computing *Oct.-Dec. 2024*

Follow-up of my Bachelor thesis. Proposes a missing-modality-agnostic federated learning for human activity recognition on head-worn wearables; robust to missing sensors.

Federated Learning for Privacy-aware Cognitive Workload Estimation
*D. Fenoglio, D. Josifovski, **A. Gobbetti**, M. Formo, H. Gjoreski, M. Gjoreski, and M. Langheinrich*
MUM 2023 *Dec. 2023*

Proposes a federated learning approach for cognitive workload estimation using wearable sensors, achieving performance comparable to centralized models while preserving data privacy.

Theses

Academic theses showcasing my research in machine learning and federated learning and my development skills on local and distributed systems.

Multi-Task Self-Supervised Methods for Label-Efficient Learning
Master Thesis, USI *Dec. 2023*

Master thesis on Multi-Task Self-Supervised Learning for label-efficient learning. Modular PyTorch framework combining contrastive + pretext tasks with dynamic loss weighting, and centralized/federated training (HAR/STL-10) to learn compact, robust representations.

Multimodal Federated Learning for Sensor Data
Bachelor Thesis, USI *Jul. 2023*

Bachelor thesis on federated learning for multimodal sensor data, ensuring privacy preservation and proposing a robust technique to handle missing modalities. The work was conducted under the supervision of Prof. Marc Langheinrich and Dr. Martin Djorevski.

Experience

Practical experience in machine learning research, federated learning, IoT systems, and software development gained through internships and part-time roles, contributing to publications and collaborative engineering projects.

Research Internship
People-Centered Computing Lab, USI *Jul. 2023 – Sep. 2023*

Researched federated learning for multimodal sensor data under Prof. Marc Langheinrich and Dr. Martin Djorevski, focusing on privacy-preserving robust training techniques and their application to human activity recognition and cognitive load estimation.

Part-time Internship (40%)
Omnibus Engineering SA *Sep. 2022 – Dec. 2022*

Conducted testing and evaluation of IoT home automation systems, focusing on system reliability and user experience optimization.

Projects

My personal and academic projects covered as different subjects as machine learning, web development, mobile apps, robotics, visual computing and computational fabrication. Projects include individual and collaborative work demonstrating a range of skills and technologies. For most of the collaborative projects, I acted as team leader.

See my personal page for more details at alessandro-gobbetti.github.io.

Extracurricular / Other

Languages: English (Professional), Italian (Native), French (Beginner).
Hobbies: Competitive chess player (online rating 2000+); big fan of geography; electric guitar.