

PERSONAL INFORMATION **Gianluca Ciattaglia** g.ciattaglia@staff.univpm.it

EDUCATION AND TRAINING

- Discussed 4th March 2022 **Doctoral course in Information Engineering**
Information Engineering Department, Università Politecnica delle Marche, Ancona, Italy.
Thesis Title: *"Modern techniques to process micro-Doppler signals from mmWave Radars."*
- Feb 2017 **Master's Degree in Electronics Engineering, with Lode.**
Università Politecnica delle Marche, Ancona, Italy.
Thesis Title: *"Implementation of transmitting technologies on NI - SDR Board"*
- Dec 2013 **Bachelor's Degree in Electronics Engineering.**
Università Politecnica delle Marche, Ancona, Italy.
Thesis Title: *"Development of a bi-modal wave guide pointing system."*

RESEARCH AND ACADEMIC EXPERIENCES

- Jan 2023 – Present **Post-doctoral Research Fellow | Electrical and Electronics Measurements - Information Engineering Department.**
Università Politecnica delle Marche, Ancona, Italy.
 - Radar vibrometry techniques;
 - Automotive Radar calibration.
- Jan 202 – Present **Post-doctoral Research Fellow | ICT Lab - Information Engineering Department.**
Università Politecnica delle Marche, Ancona, Italy.
 - Application of Machine Learning techniques for classifying radar signals, evaluation and development of different feature extraction algorithms, and performance comparison;
 - Physical Layer Authentication;
 - Interference mitigation techniques for automotive radars;
 - Digital Signal processing techniques for Software Defined Radios.
- Mar 2023 – June 2023 **Adjunct professor | Lecturer of the course Optical Networks (Reti Ottiche & Comunicazioni Ottiche [W001267] & [20134].**
Università Politecnica delle Marche, Ancona, Italy.
Academic Year 2022/2023.
- Mar 2022 – June 2022 **Adjunct professor | Lecturer of the course ICT installations (IMPIANTI ICT [W001385]).**
Università Politecnica delle Marche, Ancona, Italy.
Academic Year 2021/2022.
- Nov 2018 – Oct 2021 **PhD student | ICT Lab - Information Engineering Department.**
Università Politecnica delle Marche, Ancona, Italy.

- Application of Machine Learning techniques for classifying radar signals, evaluation and development of different feature extraction algorithms, and performance comparison;
- Development of a radar-based vibrometry system for industrial and biomedical application;
- Study of the micro-Doppler features of small UAVs and their classification with Machine Learning techniques;
- Algorithm developer for Software Defined Radio applications.

Sep 2019 – Dec 2020 **Academic Tutor**

Engineering Faculty, Università Politecnica delle Marche, Ancona, Italy.

- Support first-year students during the courses Analisi Matematica 1 and Fisica Generale;

July 2017 – May 2018 **Research Fellow | ICT Lab - Information Engineering Department.**

Università Politecnica delle Marche, Ancona, Italy.

- Simulation and validation of chaotic sequences used for spread spectrum modulation;
- Software development for SDR devices implementation (Simulation and test);
- Performance analysis and experimental evaluation.

INDUSTRIAL EXPERIENCES

July 2018 – Sept 2018 **Electronics Support Engineer | Power Unit Division - Testing and Support Group.**

Ferrari s.p.a, Gestione Sportiva, Maranello (MO), Italy.

- Electronics ECUs configuration (Tag 320 and Powerbox);
- System monitor configuration and related projects development;
- Configuration of Telemetry software (ATLAS, ATLAS data server, VDS) and CAN-bus;
- Wiring harness debug and sensors and actuators calibration;
- Data analysis with ATLAS e VDS.

Nov 2015 – Dec 2017 **Electronics Engineer | Formula SAE Polimarche Racing Team | Electronics Department.**

Università Politecnica delle Marche, Ancona, Italy.

- In charge for the "Integrated Starter Generator" development, device simulation, realization, test and installation on the car;
- In charge for the telemetry radio link, devices configuration and their installation;
- Track-side engineer for the FSAE Italy 2016 and FSAE East 2016 events;

CONTRIBUTED TALKS AND CONFERENCES

- IEEE International Workshop on Metrology for Automotive, MetroAutomotive 2022 - Conference Paper;
- IEEE International Workshop on Metrology for AeroSpace, MetroAeroSpace 2022 - Conference Paper;
- IEEE 2022 IEEE 96th Vehicular Technology Conference: VTC2022-Spring - Conference Paper;
- **IEEE International Workshop on Metrology for Automotive**, MetroAutomotive 2021 - Conference Paper;
- **IEEE International Workshop on Metrology for AeroSpace**, MetroAeroSpace 2021 - Conference Paper;
- **GTTI annual meeting 2021** - Poster session;
- **GTTI Workshop: Machine Learning per i sistemi Radar e di Telerilevamento**, Nov. 2021 - Workshop Speech;
- **IEEE Symposium on Computers and Communications**, July 2020 - Conference Paper;
- **IEEE International Workshop on Metrology for AeroSpace**, MetroAeroSpace, 2020 - Conference Paper;
- **GTTI annual meeting 2019** - Poster session;
- **IEEE 23rd International Symposium on Consumer Technologies**, 2019 - Conference Paper;
- **8th International Conference on Safety and Security Engineering**, 2019 - Conference Paper.

AWARDS, GRANTS AND CERTIFICATIONS

- **Best paper of the special session on Metrology for Radar systems** - 2021 IEEE International Workshop on Metrology for AeroSpace - Virtual Conference;
- **Certified LabVIEW associated Developer (CLAD)** - National Instruments, 2020.
- **Carassa Awards, 2nd place in remote sensing category** - GTTI annual meeting, 2019.

TECHNICAL SKILLS

- **Programming languages:** Matlab, Simulink, Stateflow, LabVIEW, Python(Anaconda, Spyder, Tensorflow), Latex, VBA, Julia;
- **Frameworks:** GNU Radio, Altium, Ansys Maxwell, Eclipse, Code Composer Studio, Illustrator, DIAdem, Sharepoint;
- **Operative systems:** Windows, Linux;
- **Laboratory instrumentation** :Spectrum analyzer, oscilloscope, signal generator, DC power analyzer, NI-PXI/VST, NI-USRP.

LANGUAGES

Mother tongue Italian

Other languages

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1

OTHERS

- **ICTS4eHealth**, Member of the Technical Program Committee - 2021/2022;
- **IEEE CTSoc**, Automotive CE Applications (CEA) technical committee member - from 2020.

LIST OF PUBLICATIONS

- Ciattaglia, G., Disha, D., De Santis, A., Gambi, E. **Patients Behaviour Monitoring Inside a Hospital Garden: Comparison Between RADAR and GPS Solutions**, (2022) Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering, LNICST, 432 LNICST, pp. 139-152;
- Ciattaglia G., Spinsante S., Gambi E., **Slow-Time mmWave Radar Vibrometry for Drowsiness Detection**, (2021) IEEE International Workshop on Metrology for Automotive;
- Ciattaglia G., Temperini G., Spinsante S., Gambi E., **mmWave Radar Features Extraction of Drones for Machine Learning Classification**, (2021) IEEE International Workshop on Metrology for Aerospace;
- Senigagliesi, L., Ricciuti, M., Ciattaglia, G., De Santis, A., Gambi, E., **Comparison of Video and Radar Contactless Heart Rate Measurements**, (2021) Communications in Computer and Information Science, 1387, pp. 96-113;
- Ciattaglia, G., De Santis, A., Disha, D., Spinsante, S., Castellini, P., Gambi, E., **Performance evaluation of vibrational measurements through mmwave automotive radars**, (2021) Remote Sensing, 13 (1), art. no. 98, pp. 1-20;
- Gambi, E., Ciattaglia, G., De Santis, A., Senigagliesi, L., **Millimeter wave radar data of people walking**, (2020) Data in Brief, 31, art. no. 105996;
- Senigagliesi, L., Ciattaglia, G., Gambi, E. **Contactless Walking Recognition based on mmWave RADAR**, (2020) Proceedings - IEEE Symposium on Computers and Communications, 2020-July, art. no. 9219565;
- Ciattaglia, G., Santis, A.D., Disha, D., Spinsante, S., Castellini, P., Gambi, E. **Performance evaluation of vibrational measurements through mmWave radars**, (2020) 2020 IEEE International Workshop on Metrology for AeroSpace, MetroAeroSpace 2020 - Proceedings, art. no. 9160237, pp. 160-165;
- Senigagliesi, L., Ciattaglia, G., De Santis, A., Gambi, E. **People walking classification using automotive radar**, (2020) Electronics (Switzerland), 9 (4), art. no. 588;
- Ricciuti, M., Ciattaglia, G., de Santis, A., Gambi, E., Senigagliesi, L. **Contactless heart rate measurements using RGB-camera and radar**. (2020) ICT4AWE 2020 - Proceedings of the 6th International Conference on Information and Communication Technologies for Ageing Well and e-Health, pp. 115-123;
- Ciattaglia, G., Senigagliesi, L., De Santis, A., Ricciuti, M. **Contactless measurement of physiological parameters**. (2019) IEEE International Conference on Consumer Electronics - Berlin, ICCE-Berlin, 2019-September, art. no. 8966140, pp. 22-26;
- Gambi, E., Ciattaglia, G., De Santis, A. **People Movement Analysis with Automotive Radar**. (2019) 2019 IEEE 23rd International Symposium on Consumer Technologies, ISCT 2019, art. no. 8900975, pp. 233-237;
- Gambi, E., Ciattaglia, G., DE SANTIS, A. **Automotive radar application for structural health monitoring**. (2019) WIT Transactions on the Built Environment, 189, pp. 79-89;
- Stara, V., Spinsante, S., Olivetti, P., Rossi, L., Montanini, L., Gambi, E., Ciattaglia, G. **OPEN-CARE: Emergent Technologies for the Care of Older Adults in Residential Facilities**. (2019) Lecture Notes in Electrical Engineering, 540, pp. 241-248;
- Gambi, E., Montanini, L., Pigini, D., Ciattaglia, G., Spinsante, S. **A home automation architecture based on LoRa technology and Message Queue Telemetry Transfer protocol**, (2018) International Journal of Distributed Sensor Networks, 14 (10);
- Gambi, E., Ricciuti, M., Ciattaglia, G., Rossi, L., Olivetti, P., Stara, V., Galassi, R. **A technological approach to support the care process of older in residential facilities**. (2018) Lecture Notes in Electrical Engineering, 544, pp. 71-79;
- Spinsante, S., Ciattaglia, G., Del Campo, A., Perla, D., Pigini, D., Cancellieri, G., Gambi, E. **A LoRa enabled building automation architecture based on MQTT**. (2017) 2017 AEIT International Annual Conference: Infrastructures for Energy and ICT: Opportunities for Fostering Innovation, AEIT 2017, 2017-January, pp. 1-5;

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