

## PERSONAL INFORMATION

## Luca Alberto Pettinari

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 <https://liukpet.github.io/lucapettinari/>

 Skype lucaalb11

Gender Male | Date of birth 11 December 1992

Nationality Italian



## WORK EXPERIENCE

Apr. 2020 – present **Research Fellow**

### Department of information engineering (UNIVPM)

Via Brece Bianche 12, 60131 Ancona (Italy)

Research grant signed in agreement with IMESA SpA, with the main focus based on the development of machine learning algorithms for predictive maintenance and optimal energy distribution management for low and medium voltage switchgears.

Business or sector Electrical Engineering

Nov. 2019 – Apr. 2020 **Manufacturing Test Engineer**

### Civitanavi Systems

Via del Progresso 5, 63827 Pedaso (Italy)

Testing and calibration of IMUs for inertial navigation systems.

- Data analysis and support in software development for the automatic extraction of screening parameters for fault detection of inertial units before shipment.
- Development of a computer tool for statistical analysis and reporting of manufactured inertial units, with particular focus on Pareto's analysis of symptoms and root causes behind detected faults.

Business or sector Defense and Mining

Oct. 2018 – Apr. 2019 **Junior AI Researcher**

### audEERING GmbH

Friedrichshafener Straße 1, 82055 Gilching (Germany)

Data collection and implementation of machine learning algorithms with the main goal of detecting heart rate from voice features.

- Hardware and software development to implement an acquisition system to collect audio/ECG signals, synchronized using tailored DSP algorithms.
- Experiment design and data collection for data-driven projects in healthcare ambit, especially related with audio and ECG signals.
- Development of a multi-purpose, task-oriented graphical user interface for audio/ECG recordings in indoors environments.
- Use of ML techniques to implement and validate machine learning models to predict physiological parameters from voice.

Business or sector Emotion Recognition and Paralinguistic Analysis

## EDUCATION AND TRAINING

### Feb. 2020 State Certification Exam

#### Univerisità Politecnica delle Marche

Engineering faculty, Via Brece Bianche 12, 60131 Ancona (Italy)

Qualification to the profession of engineer in the sector of Information Engineering.

### 2016 – 2019 M.Sc. in Biomedical Engineering

#### Univerisità Politecnica delle Marche

Engineering faculty, Via Brece Bianche 12, 60131 Ancona (Italy)

With an experimental thesis entitled *Heart Rate Prediction from Vowel Speech Signals using Machine Learning Techniques*. The thesis project, carried out at audEERING GmbH, focused on data collection of synchronized audio and ECG signals with specifically designed acquisition system and experimental protocol. On the collected data, machine learning models were developed to produce classification and regression audio-based estimates of the heart rate. Results were an improvement of those proposed in literature.

Final grade: **110/110 cum Laude**.

### Jun. 2018 – Sept. 2018 Erasmus+ Traineeship

#### audEERING GmbH

Friedrichshafener Straße 1, 82055 Gilching (Germany)

Hardware development and programming of a synchronized audio/ECG recording unit. Implementation of USB serial communication with an original request-acknowledgement protocol.

### 2011 – 2015 B.Sc. in Biomedical Engineering

#### Univerisità Politecnica delle Marche

Engineering faculty, Via Brece Bianche 12, 60131 Ancona (Italy)

With an experimental thesis entitled *Trajectory planning and modeling of an anthropomorphic manipulator*. The thesis project focused on simulation and planning of trajectories. Main result was the implementation and simulation of an algorithm for task cooperation of two 6-DOF anthropomorphic robotic arms.

Final grade: **106/110**.

### Nov. 2014 – Jul. 2015 Curricular Internship

#### Department of Information Engineering (UNIVPM)

Engineering faculty, Via Brece Bianche 12, 60131 Ancona (Italy)

Mandatory 225-hour internship, covering the arguments of the bachelor's thesis. Mainly focused on the implementation on Simulink of the kinematic model of MANUS robotic arm.

### 2006 – 2011 High School Diploma

#### IIS Leonardo da Vinci

Via Giorgio Almirante, 62012 Civitanova Marche (Italy)

Final grade: **81/100**.

## PERSONAL SKILLS

Mother tongues Italian, Slovak

Other languages	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	B2	B2	B2	B2
German	A2	A2	A2	A2	A2

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2: Proficient user  
[Common European Framework of Reference \(CEF\) level](#)

**Computer skills**

- **Operating systems:** Linux, macOS, Windows.
- **Programming languages:** Assembly, C, Matlab, Python.
- **Data science frameworks:** Keras, Scikit-Learn, Pandas, Tensorflow.
- **Web development:** HTML, CSS, Bootstrap, JavaScript, jQuery, SQL.
- **Others:** git,  $\text{\LaTeX}$ , PCB design (CAD Eagle), Arduino, electronic circuits.

**Soft skills** I have learned cooperation in a diverse, international and dynamic team during the ERASMUS traineeship period, working closely with researchers, software engineers, developers. My resourcefulness and dedication to work allows me to pursue continuously my projects with little guidance, even when there is no clear direction to follow. Therefore, I consider myself a person that can work in autonomy and manage work pressure or stress.

During my internship abroad, I built a fully working hardware/software system for the acquisition of chewing audio recordings from a sample of more than a hundred children, and had a responsibility role of coordination and supervision of the whole project, which is funded by multinational food corporations. The initiative raised the attention of the local daily ([link](#)).

**Other skills** Over 10 years of private lessons of classical and electric guitar. Performer with different music groups in several shows mainly as guitarist, bassist, and vocalist. Short experience in recording studios. Recently, I have also engaged the study of piano as self-taught. The passion for music had pushed myself to find contact points with my study subjects, in particular for what concerns with guitar electronics and sound effects.

**Driving licence** B

## ADDITIONAL INFORMATION

**Publications** Micaela Morettini, Lorenzo Marchesini, Luca Alberto Pettinari, Andrea Tigrini, Ilaria Marcantoni, Agnese Sbrollini, Laura Burattini, *TWA Simulator: a Graphical User Interface for T-wave Alternans*, Computing in Cardiology, Maastricht (2018).