europass Curriculum vitae

PERSONAL INFORMATION

Luca Alberto Pettinari

Via Filzi 93, 62012, Civitanova Marche (MC), Italy

+39 3383349649 ☎ +39 0733 816810

lalb.pettinari@gmail.com

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 Brecce 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 Brecce 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 Brecce 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 Brecce 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 Brecce 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**: LaTeX, PCB design (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

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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).