Emanuela PICIUCCO

Email: emanuela.piciucco@gmail.com

Website: http://biomedia4n6.uniroma3.it/staff/piciucco.html

Sex: F   **Date of birth:** 21/05/1991   **Nationality**: Italian

EDUCATION AND TRAINING

05. 2020– 07.2020   **SCHOOL OF ARTIFICIAL INTELLIGENCE ATTENDEE**

Pi School

- Won a merit based 12.500€ grant to attend Pi School of AI, a 8 weeks long specialized school on Machine Learning and Deep Learning
- **Project:** creating a Vocal User Interface, leveraging the latest available technology and data, and delivering in record time a working model for the partner company

11. 2016 – 11.2019   **Ph.D. STUDENT IN APPLIED ELECTRONICS**

Università degli Studi Roma Tre, Department of Engineering, Section of Applied Electronics

Biometric Systems and Multimedia Forensics Lab

- **Research topics:** Biometrics, Image Processing, Signal Processing, Machine Learning

10. 2013 – 03. 2016   **MASTER'S DEGREE IN INFORMATION AND COMMUNICATION TECHNOLOGY ENGINEERING**

Università degli Studi Roma Tre, Rome, Italy

- **Thesis Title:** *De-identification of vein pattern in biometric recognition systems*
- **Final Mark:** 110/110 cum laude
- **Supervisors:** Prof. Patrizio Campisi, Prof. Andreas Uhl

10. 2010 – 10. 2013	**BACHELOR'S DEGREE IN ELECTRONIC ENGINEERING**

Università degli Studi Roma Tre, Roma Italy

- **Thesis Title:** *EEG biometrics for individual recognition - Application of Principal Component Analysis on the spectral features of EEG signal*
- **Final Mark:** 110/110 cum laude
- **Supervisor:** Prof. Patrizio Campisi

FELLOWSHIP AND ASSIGNMENTS

01. 2020 – 02. 2021	**POSTDOCTORAL RESEARCHER**

Università degli Studi Roma Tre, Department of Engineering, Section of Applied Electronics

Biometric Systems and Multimedia Forensics Lab

- Funded by PRIN (Progetti di Ricerca di rilevante Interesse Nazionale) 2017 IMPAQTS (Implicit Manipulation in Politics - Quantitatively Assessing the Tendentiousness of Speeches)
- **Research interests:** deep learning, time-series analysis, big data analysis, computer vision, signal processing, physiological signal processing (EEG, GSR, HRV, vein pattern), sentimental analysis, emotion detection, computational linguistic, biometric recognition

07. 2018 – 11. 2018	**INTERNSHIP**

Telefonica I+D, Barcelona (Spain)

- Collaboration in the framework of the European H2020 project **ENCASE** *("Enhancing security and privaCy in the Social wEb")*
- **Research Activity:** acquisition and analysis of physiological signals (EEG, GSR, BVP) collected as response to cyberbullying contents in online social networks.
- **Research Supervisors:** Ilias Leontiadis, Nicolas Kourtellis, Ioannis Arapakis

| 07.2017 – 11. 2017 | **INTERNSHIP** |
| | |

Telefonica I+D, Barcelona (Spain)

- Collaboration in the framework of the European H2020 project **ENCASE** *("Enhancing security and privaCy in the Social wEb")*
- **Research Activity:** study and application of image processing techniques for the task of image classification
- **Research Supervisor:** Ilias Leontiadis, Nicolas Kourtellis, Ioannis Arapakis

| 10. 2015 – 02. 2016 | **INTERNSHIP** |

University of Salzburg (Austria), Computer Science Department

Multimedia Signal Processing and Security Lab

- Master thesis project about performance improvement and security enhancement in finger vein based biometric recognition systems
- Collaboration in the framework of the **COST Action IC1206** *("De-identification for privacy protection in multimedia content ")*
- **Research Supervisor:** Prof. Andreas Uhl

| 03.2014 -02.2015 | **STUDENT PART-TIME COLLABORATION (150 HOURS)** |

Università degli Studi Roma Tre, Department of Engineering, Section of Applied Electronics

- EEG acquisitions for biometric recognition purposes
- **Research Supervisor:** Prof. Patrizio Campisi

| 03. 2014 – 12. 2014 | **TUTORING ACTIVITIES** |

Università degli Studi Roma Tre, Department of Engineering, Section of Applied Electronics

- Support exercised for university students attending the "Signal Theory" course
- **Research Supervisor:** Prof. Patrizio Campisi

HONORS AND AWARDS

30.01. 2017
BEST DEMO AWARD OF THE 7ᵀᴴ GTTI THEMATIC MEETING ON MULTIMEDIA SIGNAL PROCESSING

- **Contribution title:** *"EEG based biometric recognition using a low-cost DIY system"*

PROJECTS PARTICIPATION

07. 2017 – 11.2018
ENCASE ("Enhancing security and privaCy in the Social wEb")

Telefonica I+D, Barcelona (Spain)

- **Project's topic:** leveraging the latest advances in usable security and privacy to design and implement a browser-based architecture for the protection of minors from malicious actors in online social networks (OSNs)

10. 2015 – 12.2015
COST Short Term Scientific Mission

University of Salzburg (Austria), Computer Science Department

- *COST Action IC1206, "De-identification for privacy protection in multimedia content"*
- **Project's topic:** De-identification of vein pattern in biometric recognition systems

10.2014
Maker Faire Rome

Università degli Studi Roma Tre, Department of Engineering, Section of Applied Electronics

- **Project's topic:** implementation of the "*Smart Desk*", a smart environment provided of a wireless sensor network controlled by means Raspberry Pi and Arduino.

PERSONAL SKILLS

MOTHER TONGUE   Italian

ENGLISH   Level C1

SPANISH, FRENCH   Level A2

COMPUTER SKILLS

PROGRAMMING
LANGUAGES   Matlab, Python, OpenCV, Java, SQL

LIST OF PUBLICATIONS

[1]   **E. Piciucco**, E. Maiorana, K. Kauba, A. Uhl, P. Campisi
Cancelable Biometrics for Finger Vein Recognition
1st International Workshop on Sensing, Processing and Learning for Intelligent Machines (SPLINE)
Aalborg, 6-8 Jul 2016

[2]   R.Das, **E. Piciucco,** E. Maiorana, P. Campisi
Visually Evoked Potentials for EEG Biometric Recognition
1st International Workshop on Sensing, Processing and Learning for Intelligent Machines (SPLINE)
Aalborg, 6-8 Jul 2016

[3]   K. Kauba, **E. Piciucco**, E. Maiorana, A. Uhl, P. Campisi
Advanced Variants of Feature Level Fusion for Finger Vein Recognition
15th International Conference of the Biometrics Special Interest Group (BIOSIG)
Darmstadt, 21-23 Sept 2016

[4]   **E. Piciucco**, E. Maiorana, O. Falzon, K.P. Camilleri, P. Campisi
Steady-State Visual Evoked Potentials for EEG-Based Biometric Identification
16h International Conference of the Biometrics Special Interest Group (BIOSIG)
Darmstadt, 20-22 Sept 2017

[5]   **E Piciucco**, E. Maiorana, P. Campisi
Biometric fusion for palm-vein-based recognition systems
International Tyrrhenian Workshop on Digital Communication, Sept 2017, pp. 18-28

[6]   **E Piciucco**, E. Maiorana, P. Campisi
Palm vein recognition using a high dynamic range approach
IET Biometrics, 2018, 7(5), pp. 439-446.

[7]   R. Das, **E. Piciucco**, E. Maiorana, P. Campisi
Convolutional Neural Network for Finger-Vein-Based Biometric Identification
IEEE Transactions on Information Forensics and Security, 2018, 14 (2), pp. 360-373

[8]   **E. Piciucco**, R. Salih Kuzu, E. Maiorana, P. Campisi
On the Cross-Finger Similarity of Vein Patterns
International Conference on Image Analysis and Processing, Sept 2019, pp. 12 - 20

[9]   R. Salih Kuzu, **E. Piciucco**, E. Maiorana, P. Campisi
On-the-fly finger-vein-based biometric recognition using deep neural networks
IEEE Transactions on Information Forensics and Security, 2020, 15, pp. 2641-2654

Roma, 01/03/2021

Autorizzo il trattamento dei miei dati personali, ai sensi del D.lgs. 196 del 30 giugno 2003.

Roma, 01/03/2021