

CURRICULUM VITAE OF EMANUELE MAIORANA

Personal information

- **Emanuele Maiorana** was born in Rome, Italy, on April 5th, 1980. He received the Laurea Degree cum laude in Electronics Engineering from Roma Tre University, Rome, Italy, in May 2004. The title of the thesis is "Modelization and Synthesis of Video Textures using Fractal Processes".
- He won the "Premio Galluzzi" 2004 for Electronic Engineering, for having distinguished himself in his university studies.
- From September 2004 to November 2005 he worked for Accenture Consulting in the Communications and High-Tech Workgroup, having TelecomItalia as customer
- He attended the "Biomedical electronics, Electromagnetics and Telecommunications" doctoral school in Engineering of the Roma Tre University from October 2005 to October 2008, achieving his Ph.D. degree with European Doctorate Label in April, 2009 with the thesis entitled "Biometric Template Protection for Signature-Based Authentication Systems".
- From March 2009 to November 2009 he worked for the consortium "Radiolabs" in research projects funded by the European Commission for FP6 and FP7, for the company SELEX Communications as customer.
- Winner in October 2009 for the research grant on "Secure mobile communications in public and private networks", at the Department of Applied Electronics, Roma Tre University.
- Since September 2010 he works as a technician at the Department of Engineering of Roma Tre University, Rome, Italy.
- He was a visiting researcher at the "Universidad Autonoma de Madrid", Madrid, Spain, in 2007 and 2008, at the "Universidad de Vigo", Vigo, Spain, in 2010, at the "University of Warwick", Coventry, UK, in 2012, at the "Ecole Polytechnique de Nantes", Nantes, France, in 2013, and at the "University of Twente", Twente, The Netherlands, in 2013.
- He is the recipient of the Lockheed Martin Best Paper Award for the Poster Track at the IEEE Biometric Symposium 2007, and of the Honeywell Student Best Paper Award at the IEEE Biometrics: Theory, Applications and Systems conference 2008.
- His research interests are in the area of digital signal and image processing with applications to multimedia communications and security of telecommunication systems. Specifically, he has been working on biometric recognition and protection of biometric templates, high dynamic range images imaging and watermarking, synthesis of video textures, and stereo image analysis and enhancement.

TEACHING EXPERIENCE

2019-2020:

- "Signal Processing for Big Data Analytics" for the "Laurea Magistrale" degree at the Università degli Studi di Roma "Roma Tre".

2018-2019:

- "Big Data Processing & Analytics" for the "Laurea Magistrale" degree at the Università degli Studi di Roma "Roma Tre".

2017-2018:

- "Big Data Processing & Analytics" for the "Laurea Magistrale" degree at the Università degli Studi di Roma "Roma Tre".

2016-2017:

- "Telecommunication Services and Networks Planning and Management" ("Pianificazione e Gestione dei Servizi e delle Reti di Telecomunicazioni") for the "Laurea Magistrale" degree at the Università degli Studi di Roma "Roma Tre".

2015-2016:

- "Telecommunication Services and Networks Planning and Management" ("Pianificazione e Gestione dei Servizi e delle Reti di Telecomunicazioni") for the "Laurea Magistrale" degree at the Università degli Studi di Roma "Roma Tre".

2014-2015:

- "Telecommunication Services and Networks Planning and Management" ("Pianificazione e Gestione dei Servizi e delle Reti di Telecomunicazioni") for the "Laurea Magistrale" degree at the Università degli Studi di Roma "Roma Tre".

2013-2014:

- "Telecommunication Services and Networks Planning and Management" ("Pianificazione e Gestione dei Servizi e delle Reti di Telecomunicazioni") for the "Laurea Magistrale" degree at the Università degli Studi di Roma "Roma Tre".

2012-2013:

- "Telecommunication Services and Networks Planning and Management" ("Pianificazione e Gestione dei Servizi e delle Reti di Telecomunicazioni") for the "Laurea Magistrale" degree at the Università degli Studi di Roma "Roma Tre".

BOOK CHAPTERS

<p>Maiorana E and Campisi P (2017), "<i>Secure cognitive recognition: brain-based biometric cryptosystems using EEG</i>", In User-Centric Privacy and Security in Biometrics, pp. 325-351. Institution of Engineering and Technology. [BibTeX] [DOI] [URL]</p>
<p>Campisi P, Maiorana E and Neri A (2011), "<i>Encyclopedia of Cryptography and Security</i>" Berlin , pp. 1208-1210. Springer. [BibTeX]</p>
<p>Campisi P, E. Maiorana, Mouchere H, Viard-Gaudin C and Neri A (2011), "<i>Encyclopedia of Cryptography and Security</i>" , [BibTeX]</p>
<p>Maiorana E, Campisi P and Neri A (2011), "<i>New Technologies for Digital Crime and Forensics: Devices, Applications and Software</i>" HERSHEY PA , pp. 290-315. IGI Global. [BibTeX] [DOI] [URL]</p>
<p>Campisi P, E. Maiorana and Neri A (2010), "<i>of Research on Computational Forensics, Digital Crime and Investigation: Methods and Solutions</i>" HERSHEY -- USA IGI Global,. [BibTeX]</p>
<p>Campisi P, E. Maiorana and Neri A (2009), "<i>Encyclopedia of Biometrics</i>" [BibTeX]</p>
<p>Campisi P, E. Maiorana and Neri A (2009), "<i>Encyclopedia of Biometrics</i>" NEW YORK -- USA Springer. [BibTeX]</p>
<p>Campisi P, E. Maiorana and Neri A (2009), "<i>Biometrics: Theory, Methods, and Applications</i>" [BibTeX]</p>

JOURNALS

<p>Maiorana E (2020), "<i>Deep learning for EEG-based biometric recognition</i>", Elsevier Neurocomputing. [Abstract] [BibTeX] [DOI]</p>
<p>Kuzu RS, Piciuccio E, Maiorana E and Campisi P (2020), "<i>On-the-fly Finger-Vein-based Biometric Recognition using Deep Neural Networks</i>", IEEE Transactions on Information Forensics and Security. [Abstract] [BibTeX] [DOI] [PDF]</p>
<p>Das R, Piciuccio E, Maiorana E and Campisi P (2019), "<i>Convolutional Neural Network for Finger-Vein-Based Biometric Identification</i>", IEEE Transactions on Information Forensics and Security., February, 2019. Vol. 14 [BibTeX] [DOI] [PDF]</p>
<p>Maiorana E and Campisi P (2018), "<i>Longitudinal Evaluation of EEG-Based Biometric Recognition</i>", IEEE Transactions on Information Forensics and Security., May, 2018. Vol. 13(5), pp. 1123-1138. [BibTeX] [DOI] [PDF]</p>
<p>Piciuccio E, Maiorana E and Campisi P (2018), "<i>Palm Vein Recognition Using a High Dynamic Range Approach</i>", IET Biometrics., January, 2018. Institution of Engineering and Technology. [BibTeX] [DOI] [URL] [PDF]</p>
<p>Hine GE, Maiorana E and Campisi P (2017), "<i>A Zero-Leakage Fuzzy Embedder From the Theoretical Formulation to Real Data</i>", IEEE Transactions on Information Forensics and Security., July, 2017. Vol. 12(7), pp. 1724-1734. [Abstract] [BibTeX] [PDF] [DOI]</p>
<p>Gomez-Barrero M, Maiorana E, Galbally J, Campisi P and Fierrez J (2017), "<i>Multi-biometric template protection based on Homomorphic Encryption</i>" , Pattern Recognition. Vol. 67, pp. 149 - 163. [BibTeX] [DOI] [URL]</p>

<p>Maiorana E, Solé-Casals J and Campisi P (2016), "<i>EEG signal preprocessing for biometric recognition</i>", Machine Vision and Applications. Vol. 27(8), pp. 1351-1360. [BibTeX] [DOI] [URL]</p>
<p>Das R, Maiorana E and Campisi P (2016), "<i>EEG Biometrics Using Visual Stimuli: A Longitudinal Study</i>", IEEE Signal Processing Letters, March, 2016. Vol. 23(3), pp. 341-345. [BibTeX] [DOI] [URL] [PDF]</p>
<p>La Rocca D, Masia V, Maiorana E, Vallauri EL and Campisi P (2016), "<i>Brain response to Information Structure misalignments in linguistic contexts</i> ", Neurocomputing. Vol. 199, pp. 1 - 15. Elsevier. [BibTeX] [DOI] [URL]</p>
<p>Maiorana E, La Rocca D and Campisi P (2016), "<i>Eigenbrains and Eigentensorbrains: Parsimonious bases for EEG biometrics</i> ", Neurocomputing . Vol. 171, pp. 638 - 648. [BibTeX] [DOI] [URL]</p>
<p>Maiorana E, La Rocca D and Campisi P (2016), "<i>On the Permanence of EEG Signals for Biometric Recognition</i>", IEEE Transactions on Information Forensics and Security. Vol. 11(1), pp. 163-175. [BibTeX] [DOI] [URL]</p>
<p>Maiorana E and Campisi P (2016), "<i>High-capacity watermarking of high dynamic range images</i>", EURASIP Journal on Image and Video Processing. Vol. 2016(1), pp. 3. [BibTeX] [DOI] [URL]</p>
<p>Maiorana E, Hine GE and Campisi P (2015), "<i>Hill-Climbing Attacks on Multibiometrics Recognition Systems</i>", IEEE Transactions on Information Forensics and Security., May, 2015. Vol. 10(5), pp. 900-915. [Abstract] [BibTeX] [DOI]</p>
<p>Maiorana E and Campisi P (2015), "<i>Multi-bit watermarking of high dynamic range images based on perceptual models</i>", Security and Communication Networks. Wiley Online Library. [BibTeX][DOI]</p>
<p>Argones Rua E, Maiorana E, Ji AC and Campisi P (2012), "<i>Biometric Template Protection Using Universal Background Models: An Application to Online Signature</i>", IEEE TRANSACTIONS ON INFORMATION FORENSICS AND SECURITY. Vol. 7, pp. 269-282. [BibTeX] [DOI] [URL]</p>
<p>Maiorana E and Campisi P (2010), "<i>Fuzzy Commitment for Function Based Signature Template Protection</i>", IEEE SIGNAL PROCESSING LETTERS. Vol. 17, pp. 249-252. [BibTeX] [DOI] [URL]</p>
<p>Maiorana E, Campisi P, Fierrez J, Ortega Garcia J and Neri A (2010), "<i>Cancelable Templates for Sequence Based Biometrics with Application to On-line Signature Recognition</i>", IEEE TRANSACTIONS ON SYSTEMS MAN AND CYBERNETICS PART A-SYSTEMS AND HUMANS. Vol. 40, N. 3, pp. 525-538. [BibTeX] [DOI] [URL]</p>
<p>Maiorana E (2010), "<i>Biometric cryptosystem using function based on-line signature recognition</i> ", Expert Systems with Applications . Vol. 37(4), pp. 3454 - 3461. [BibTeX] [DOI] [URL]</p>
<p>Nanni L, Maiorana E, A L and Campisi P (2010), "<i>Combining local, regional and global matchers for a template protected on-line signature verification system</i>", EXPERT SYSTEMS WITH APPLICATIONS. Vol. 37, pp. 3676-3684. [BibTeX] [DOI] [URL]</p>
<p>Campisi P, E. Maiorana and Neri A (2009), "<i>User Authentication using keystroke dynamics for cellular phones</i>", IET SIGNAL PROCESSING. Vol. 3, pp. 333-341. [BibTeX] [DOI] [URL]</p>

Maiorana E, Campisi P and Neri A (2009), "*Template Protection and Renewability for Dynamic Time Warping based Biometric Signature Verification*", INTERNATIONAL JOURNAL OF DIGITAL CRIME AND FORENSICS. Vol. 1,

[[BibTeX](#)]

Campisi P, E. **Maiorana**, A. Neri and Scarano G (2008), "*Video Textures Modeling and Synthesis using Fractal Processes*", IET IMAGE PROCESSING. Vol. 2, pp. 1-17.

[[BibTeX](#)] [[DOI](#)] [[URL](#)]

Maiorana E, Campisi P and Neri A (2008), "*User Adaptive Fuzzy Commitment for Signature Templates Protection and Renewability*", JOURNAL OF ELECTRONIC IMAGING. Vol. 17 Issue: 1 Jan-March 2008

[[BibTeX](#)] [[DOI](#)]

Campisi P, **Maiorana E** and Neri A (2007), "*Video Textures Fractal Modeling*", IEEE SIGNAL PROCESSING LETTERS. Vol. 14, pp. 405-408.

[[BibTeX](#)] [[DOI](#)]

PROJECTS

- Since 2017: Research within the European Project EU 2020-MSCA-ITN-2015 AMBER (enhancing Mobile BiomEtrics).
- 2016/2019: Research within the European Project EU 2020-MSCA-RISE-2015 ENCASE (ENhancing seCurity and PrivAcy in the Social wEb: a user-centered approach for theprotection of minors).
- 2014: Research within the R&D project for Wireless Indoor localization with SOGEI.
- 2012/2014: Research within the R&D project DAHMS (Distributed Architecture Home Modular Multifunctional Systems) with Radiolabs.
- 2012/2013: Research within the European Project "Digital Image and Video Forensics" (DiveFor) for 2012 and 2013.
- 2012/2013: Teaching contract with the "Consorzio Nazionale Interuniversitario per le Telecomunicazioni" (CNIT) for lectures within the project "Ground/air system based on an innovative NAVCOM payload to be loaded on satellites" (GAPACOM)
- 2009: Projects for the company Selex Communications (as customer): "Mid-Term Networking Technologies In-Flight and Rig Validation for Avionic Applications" (MINERVAA), FP6 European Project; "Java Environment for Parallel Realtime Development" (JEOPARD), FP7 European Project; "Seamless Aeronautical Networking of Datalink, Radios and Antennas" (SANDRA), FP7 European Project.
- 2009: Project "GAPACOM - Ground/air system based on an innovative NAVCOM payload to be loaded on satellites" for the National Inter-University Consortium for Telecommunications (CNIT): study and specification of the integrated network between ground segment and space segment, with regard to error handling and communication protocols with H-ARQ feedback messages.
- 2005/2007: Advanced Three Dimensional Multi-Band System (3D-MBS) for airport surface movement surveillance and control integrating stereoscopic techniques" (2005-2007) for the company So.G.Aer. MIUR FAR project 2004-2006. Implementation of a surveillance system for the airport "Elmas" of Cagliari, based on observations from video sequences acquired in the visible and the infrared spectra.

- 2006: TeleAssistance for critical patient not all-sufficient - Mobile phone Application development" (2006) for the company CITEC. Implementation of a mobile-server interface for communication of biomedical information.
- 2006: Integrated multimedia system for the automatic management of telemedicine services DDPACS (Demand Date Picture Archiving and Communication System)" (2006) for the company INFOTEL. Implementation of a client-server application for the transmission of biomedical images.
- 2005: UNICA/C (Unified Network Inventory Control Architecture/Switching Network)" (2005) for TelecomItalia. Analysis of user requirements, design of system interfaces, implementation and test planning for the new TelecomItalia Inventory system for the switching network, on the Operational Support System (OSS) side of the Wireline Business Unit of the TelecomItalia Network.
- 2005: UNICA/RA (Unified Network Inventory Control Architecture/Access Network)" (2004-2005) for TelecomItalia. Analysis of user requirements, implementation and test planning for the new TelecomItalia Inventory system for the switching network, on the Operational Support System (OSS) side of the Wireline Business Unit of the TelecomItalia Network.
- 2004: Bovine Registry Automatic System" (2004) for the consortium CO.AN.AN. Implementation of algorithms for digital processing in the physical and data link layers of a communication system.