

# CURRICULUM VITAE

## Filippo Luigi Maria Milotta

### Office address

Cittadella universitaria  
Viale A. Doria n°6, 95125,  
Catania, Italy  
[milotta@dmf.unict.it](mailto:milotta@dmf.unict.it)

### Research interests:

Human Interaction & Multimedia, Computer Vision, Image Processing, Pattern Recognition,  
2D and 3D Digital Imaging applied to Cultural Heritage and Medical Research.

### EDUCATION

- |              |   |
|--------------|---|
| 2014-present | - Ph.D. Candidate in Mathematics and Computer Science (A.B.D.), University of Catania (Italy), granted by TIM Telecom Italia, Joint Open Lab WAVE – Wireless Applications in multidevice Ecosystems<br>Dissertation title: <i>Multi device media analysis and summarization for high bandwidth connected environments</i> |
| 2013-2014    | - M.Sc. in Computer Science, summa cum laude, University of Catania (Italy).<br>Thesis: <i>Depth-map based obstacle detection for visually impaired</i>   |
| 2009-2012    | - B.Sc. in Computer Science, summa cum laude, University of Catania (Italy).<br>Thesis: <i>Detection and correction techniques concerning magnetic tapes artefacts</i>  |

### ADDITIONAL EDUCATION

- |      |  |
|------|--|
| 2016 | - Institute of Electrical and Electronic Engineers (IEEE) – <i>Eurasip Summer School on Signal Processing (S3P – 2016): Semantics in Media</i> . University of Trento, Cavalese, Italy, 4/9/2016 – 10/9/2016 |
| 2016 | - <i>Medical Imaging Summer School (MISS '16): Medical Imaging meets Machine Learning</i> . University of Catania, Favignana, Italy, 31/7/2016 – 6/8/2016.   |
| 2016 | - <i>International Computer Vision Summer School (ICVSS '16): Computer Vision: What Happens Next?</i> . University of Catania, Ragusa, Italy, 17/7/2016 – 23/7/2016.   |
| 2016 | - E-course of <i>Machine Learning</i> by A. Ng, Stanford University on Coursera. Certificate earned on May 28, 2016.   |
| 2015 | - <i>International Computer Vision Summer School (ICVSS '15): Learning to see</i> . University of Catania, Ragusa, Italy, 12/7/2015 – 18/7/2015.   |
| 2014 | - <i>Medical Imaging Summer School (MISS '14): Medical Imaging meets Computer Vision</i> . University of Catania, Favignana, Italy 28/7/2014 – 1/8/2014.   |
| 2014 | - <i>International Computer Vision Summer School (ICVSS '14): From Fundamentals to Applications</i> . University of Catania, Ragusa, Italy, 13/7/2014 – 19/7/2014  |
| 2012 | - <i>International Computer Vision Summer School (ICVSS '12): 3R's of Computer Vision: Recognition, Registration, Reconstruction</i> . University of Catania, Ragusa, Italy, 15/7/2012 – 21/7/2012.          |

## **CURRENT ACADEMIC APPOINTMENT**

2/2017 – present - Visiting Scholar in the *Center for Virtualization and Applied Spatial Technologies* (CVAST), University of South Florida

## **PREVIOUS ACADEMIC APPOINTMENTS**

2014 - 2017 - Graduate Teaching Assistant in the University of Catania for the courses of Multimedia, Computer Vision, Pattern Recognition, Interaction and Multimedia, Digital Game Development.

## **TEACHING**

*As Graduate Assistant of my Supervisor Dr. F. Stanco, who holds several courses offered by the University of Catania (Italy), I taught a number of modules. Those courses were mainly aimed to Italian undergraduate and graduate students of Computer Science. Modules for graduate students have been taught in English.*

### **- Multimedia (Graduate Students)**

18 hours of frontal lectures and Matlab laboratory (2016-17). Module “Video media and Motion stimulation”.

15 hours of frontal lectures and Matlab laboratory (2014-15). Module “Video media and Motion stimulation”.

### **- Computer Vision (Graduate Students)**

6 hours of frontal lectures and Matlab laboratory (2014-15). Module “Stereoscopy”.

Seminar on “3D scan technologies”, aimed to students of the Academy of Fine Arts (2014-15)

### **- Pattern Recognition (Graduate Students)**

Seminar on “k-nn clustering” (2016-17)

Seminar on “Bayesian Networks: d-separation and applications” (2014-15)

### **- Interaction and Multimedia (Undergraduate Students)**

2 hours of frontal lectures (2015-16). Module “Common image formats: definitions and specs”.

### **- Digital Game Development (Undergraduate Students)**

3 hours of frontal lectures (2015-16). Module “Learning curve and User experience”.

### **- Workshops and other Seminars**

• *Towards perspective-free object counting with deep learning*, seminar given as reading group for Ph.D. students in the Image Processing Laboratory (IPLab), in the University of Catania (2016)

• *3D Scanning: definition and applications*, seminar given in the National Event Arte e(‘) Scienza (Art is Science) (2016)

• *Local Convolutional Features with Unsupervised Training for Image Retrieval*, seminar given as reading group for Ph.D. students in the Image Processing Laboratory (IPLab), in the University of Catania (2016)

• *Archeomatica: Computer Science applied on Cultural Heritage*, seminar given in the National Event Arte e(‘) Scienza (Art is Science) (2015)

• *3D scan technologies*, workshop aimed for students from High School (2015, 2017)

## **SUPERVISION OF UNDERGRADUATE AND GRADUATE STUDENTS**

2017

5. Michele Bellocchi, “*Design and development of new features and applications for The Social Picture Framework*”, University of Catania, Department of Mathematics and Computer Science, M.Sc. thesis in Computer Science (co-supervisor).

4. Mirko R. Aiello, “*Photogrammetry and applications: 3DCSI, a software for exploration, marking and automatic report of crime scenes*”, University of Catania, Department of Mathematics and Computer Science, M.Sc. thesis in Computer Science (co-supervisor).

- 2016 3. Islam Seddek, “*Digital Documentation and Preservation of Antique Books*” University of Catania, Department of Mathematics and Computer Science, and Cairo University, thesis in Master In Conservation Of Antique Photographs And Paper Heritage (co-supervisor).
- 2016 2. Giuseppe Leotta, “*Watermarking algorithms for authenticity and integrity of digital media and copyright protection*”, University of Catania, Department of Mathematics and Computer Science, M.Sc. thesis in Computer Science (co-supervisor).
- 2015 1. Alessandro Nicolosi, “*3D Viewer of Morgantina Silver Treasure*”, University of Catania, Department of Mathematics and Computer Science, B.Sc. thesis in Computer Science (co-supervisor).

## **ACADEMIC AND PROFESSIONAL AFFILIATIONS**

- 2011 – present Image Processing Lab, University of Catania, Department of Mathematics and Computer Science  
Link: <http://iplab.dmi.unict.it/people/>
- 2015 – present TIM JOL WAVE (Joint Open Lab Wireless Applications in multi-deVice Ecosystems)  
Link: <http://jol.telecomitalia.com/jolwave/people/>

## **PUBLICATIONS**

### **A) Chapters in Books**

- Milotta F.L.M. in press, Virtual Restoration Techniques of Antique Photographs, in M.F. Ali, E. Ciliberto, M. Ali (eds.), *Photographic Conservation*. (co-authored with F. Stanco, G. Ramponi, S. Carrato, D. Allegra)
- Milotta F.L.M. 2015, Hand Held 3D Scanning for Cultural Heritage: Experimenting Low Cost Structure Sensor Scan. In: *Handbook of Research on Emerging Technologies for Architectural and Archaeological Heritage*. IGI Global, 2017. p. 475-499. (co-authored with D. Allegra, G. Gallo, L. Inzerillo, M. Lombardo, C. Santagati, F. Stanco)
- Milotta F.L.M. 2015, Un approccio multidisciplinare per lo studio di un Tesoro unico al mondo. Gli argenti della casa di Eupolemo a Morgantina, in L. Maniscalco (eds.), *Morgantina duemilaquindici. La ricerca archeologica a sessant'anni dall'avvio degli scavi*. (co-authored with F. Stanco, G. Ramponi, S. Carrato, D. Allegra)

### **B) Peer review journals**

- Milotta, F.L.M. 2017, Virtual anastylosis of Greek sculpture as museum policy for public outreach and cognitive accessibility. *Journal of Electronic Imaging*, 2017, 26.1: 011025-011025. (co-authored with F. Stanco, D. Tanasi, D. Allegra, G. Lamagna, G. Monterosso)
- Milotta F.L.M. 2017, Integrated three-dimensional models for noninvasive monitoring and valorization of the Morgantina silver treasure (Sicily). *Journal of Electronic Imaging*, 2017, 26.1: 011015-011015. (co-authored with M.F. Alberghina, F. Alberghina, D. Allegra, F. Di Paola, L. Maniscalco, G. Milazzo, L. Pellegrino, S. Schiavone, F. Stanco)
- Milotta F.L.M., 2016, Tracking error in digitized analog video: automatic detection and correction. *Multimedia Tools and Applications*, 2016, 75.7: 3733-3746. (co-authored with F. Stanco, D. Allegra)

### **C) Proceedings of conferences**

- Milotta F.L.M. in press, The Social Picture: Advanced Image Analysis Applications, in proceedings of *Smart Tools and Applications in Graphics (STAG)*, 2017. (co-authored with M. Bellocchi, S. Battiato)
- Milotta F.L.M. in press, A digital approach for the study of Roman signacula from Syracuse, Sicily, in proceedings of *Smart Tools and Applications in Graphics (STAG)*, 2017. (co-authored with D. Tanasi, I. Gradante, F. Stanco, H. Kaplan)
- Milotta F.L.M. in press, ARCA (Automatic Recognition of Color for Archaeology): a Desktop Application for Munsell Estimation, in proceedings of the *19th International Conference on Image Analysis and Processing (ICIAP)*, 2017. (co-authored with F. Stanco, D. Tanasi)

- Milotta F.L.M. in press, Description of Breast Morphology through Bag of Normals Representation, in proceedings of the *19th International Conference on Image Analysis and Processing (ICIAP)*, 2017. (co-authored with D. Allegra, D. Sinitò, F. Stanco, G. Gallo, W. Taher, G. Catanuto)
- Milotta F.L.M. in press, Organizing Videos Streams for Clustering and Estimation of Popular Scenes, in proceedings of the *19th International Conference on Image Analysis and Processing (ICIAP)*, 2017. (co-authored with S. Battiato, G.M. Farinella, A. Ortis, F. Stanco, V. D'Amico, L. Addesso, G. Torrìsi)
- Milotta F.L.M. 2016, 3D Digital Imaging for Knowledge Dissemination of Greek Archaic Statuary, in G. Pintore, F. Stanco (eds), *STAG: Smart Tools and Apps in computer Graphics*, Eurographics Proceedings, Genova 3-4 October 2016, The Eurographics Association, pp. 133-141 (co-authored with F. Stanco, D. Allegra, D. Tanasi)
- Milotta F.L.M. 2016, Low cost handheld 3D scanning for architectural elements acquisition, in G. Pintore, F. Stanco (eds), *STAG: Smart Tools and Apps in computer Graphics*, Eurographics Proceedings, Genova 3-4 October 2016, The Eurographics Association, pp. 127-131. (co-authored with D. Allegra, G. Gallo, L. Inzerillo, M. Lombardo, C. Santagati, F. Stanco)
- Milotta F.L.M. 2016, Breast Shape Parametrization Through Planar Projections. In: *International Conference on Advanced Concepts for Intelligent Vision Systems*. Springer International Publishing, 2016. p. 135-146. (co-authored with D. Allegra, G. Catanuto, G. Gallo, Y. Gholizade Atani, F. Stanco)
- Milotta F.L.M. 2016, The Social Picture. In: Proceedings of the 2016 ACM on *International Conference on Multimedia Retrieval*. ACM, 2016. p. 397-400. (co-authored with S. Battiato, G.M. Farinella, A. Ortis, L. Addesso, A. Casella, V. D'Amico, G. Torrìsi)
- Milotta, F.L.M. 2016, RECFusion: Automatic Scene Clustering and Tracking in Videos from Multiple Sources. *Electronic Imaging*, 2016, 2016.7: 1-6. (co-authored with S. Battiato, F. Stanco, V. D'Amico, G. Torrìsi, L. Addesso)
- Milotta F.L.M. 2015, Archaeometric characterization and 3D survey: new perspectives for monitoring and valorisation of Morgantina silver Treasure (Sicily). In: *In Proceedings of 1st International Conference on Metrology for Archaeology*. 2015. (co-authored with M.F. Alberghina, F. Alberghina, D. Allegra, F. Di Paola, L. Maniscalco, S. Schiavone, F. Stanco)
- Milotta F.L.M. 2015, Virtual unrolling using X-ray computed tomography. In: *Signal Processing Conference (EUSIPCO)*, 2015 23rd European. Institute of Electrical and Electronic Engineers (IEEE), 2015. p. 2864-2868. (co-authored with D. Allegra, E. Ciliberto, P. Ciliberto, G. Petrillo, F. Stanco, C. Trombatore)
- Milotta F.L.M. 2015, An electronic travel aid to assist blind and visually impaired people to avoid obstacles. In: *International Conference on Computer Analysis of Images and Patterns*. Springer International Publishing, 2015. p. 604-615. (co-authored with D. Allegra, F. Stanco, G.M. Farinella)
- Milotta F.L.M. 2013, Detection and correction of Mistracking in digitalized analog video. In: *International Conference on Image Analysis and Processing*. Springer Berlin Heidelberg, 2013. p. 218-227. (co-authored with F. Stanco, D. Allegra)

#### **D) Abstract**

- Milotta F.L.M. in press, 3D digital imaging for study and semi-automatic matching of ancient Sicilian bronze seals, in proceedings of *Conference on Cultural Heritage and New Technologies (CHNT)*, 2017. (co-authored with D. Tanasi, F. Stanco, I. Gradante)

#### **PATENTS**

- Milotta F.L.M. 2017, (provisional) *Automatic Digital Method for Classification of Colors in Munsell Color System*, which was filed with the United States Patent and Trademark Office on April 19, 2017, and assigned Serial No. 62/487,178. (co-authored with F. Stanco, D. Tanasi)

## **PROFESSIONAL SERVICES**

### **A) Journal reviewer**

- Journal on Electronic Imaging (JEI)
- Journal on Computing and Cultural Heritage (JCCH)
- Multimedia Tools and Applications (MTA)
- Journal of Computer Vision and Image Understanding (CVIU)

### **B) Conference reviewer**

- International Conference on Image Analysis and Processing (ICIAP)
- Smart Tools and Applications in Graphics (STAG)
- International Conference on Computer Vision Theory and Applications (VISAPP)
- European Conference on Computer Vision (ECCV)
- Assistive Computer Vision and Robotics (ACVR)

## **AWARDS**

2016                      Institute of Electrical and Electronic Engineers (IEEE) Summer School on Signal Processing best poster award

## **CURRENT RESEARCH PROJECTS**

2014 – present                      *Multi device media analysis and summarization for high bandwidth connected environments*, main research topic of PhD Studentship (University of Catania), in collaboration with TIM Telecom Italia Joint Open Lab (JOL) WAVE (Wireless Applications in multidevice Ecosystems)

2015 – present                      *Data processing of breast 3D scans for clinical monitoring*, in collaboration with Dr G. Catanuto (MD, Azienda Ospedaliera Cannizzaro - Catania), Dr. F. Stanco, Dr. G. Gallo, and Mr. D. Allegra (University of Catania)

2011 – present                      *Archeomatica, when Archaeology meets Computer Science* (University of Catania)  
Link: <http://www.archeomatica.unict.it/index.php>

2015 – 2016                      *Digitization of the Historical Archive of the University of Catania*, in collaboration with Dr. S. Consoli, Dr. F. Stanco, and Mr. D. Allegra (University of Catania)

## **OTHER MEMBERSHIPS**

- Member of Computer Applications & Quantitative Methods in Archaeology (CAA) (2017 - present)

- Member (number: 93903598) of the Institute of Electrical and Electronic Engineers (IEEE) Signal Processing Society (2016)

## **COMPUTER SCIENCE SKILLS**

- European Computer Driving License (2009)

- Proficiency MATLAB programmer

- Proficiency JAVA programmer

- Good C, C++ programmer

- Digital Game Development (Unity 3D)

- Office Automation (Word, Powerpoint, Excel)

- Web Designing (Dreamweaver, Frontpage)

- Digital Imaging (Photoshop, Gimp, Reflectance Transformation Imaging)

- 3D Modelling (Blender)

- Mesh Processing (Meshlab, Geomagic Studio)

- Photogrammetry and Image based 3D Modelling (Photoscan, VSFM)

- Video editing (Adobe Premiere, After Effects)

- Mastery in the use of 3D scanners

- Machine Learning (experience in CNN training)

**LANGUAGES**

- Italian (mother tongue)
- English (fluent)

**REFEREES**

**Available under request**

October 7, 2017