CURRICULUM VITAE

Filippo Luigi Maria Milotta

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University of Catania, Department of Mathematics and Computer Science
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Research interests:
Computer Vision, Image Processing, Pattern Recognition, Human Interaction & Multimedia,
2D and 3D Digital Imaging applied to Cultural Heritage and Medical Research.

EDUCATION

2014-early 2018	- Ph.D. ABD in Mathematics and Computer Science, University of Catania (Italy), granted by TIM Telecom Italia, Joint Open Lab WAVE – Wireless Applications in multideVice Ecosystems
	Dissertation title: *Multi device media analysis and summarization for high bandwidth connected environments*
2012-2014	- M.Sc. in Computer Science, summa cum laude, University of Catania (Italy).
	Thesis: *Depth-map based obstacle detection for visually impaired*
2009-2012	- B.Sc. in Computer Science, summa cum laude, University of Catania (Italy).
	Thesis: *Detection and correction techniques concerning magnetic tapes artefacts*

ADDITIONAL EDUCATION[1]

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

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[1] The date format in this section is day / month / year

CURRENT ACADEMIC APPOINTMENT

2017 – present   - Postdoctoral fellowship in Computer Science, University of Catania (Italy). Program: *"Scene Understanding and Behavioural Analysis from Egocentric Visual Data"* – Project *"Vision Exploitation for Data Interpretation (V.E.D.I.)"*.

PREVIOUS ACADEMIC APPOINTMENTS

2/2017 – 8/2017   - Visiting Scholar in the *Center for Virtualization and Applied Spatial Technologies* (CVAST), University of South Florida

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 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 stimation".
15 hours of frontal lectures and Matlab laboratory (2014-15, 2017-2018). Module "Video media and Motion stimation".

- 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)

- Human 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".

I taught the following course as formal teacher for the Higher Technical "Steve Jobs Academy", Caltagirone (Italy). Those courses were mainly aimed to Italian undergraduate and graduate students of Computer Science. Contents have been taught in English when required.

- Data Management *(Graduate Students)*
70 hours of frontal lectures on Database Systems (Concepts, Languages and Architectures), and MySQL laboratory (2017-18).

- Workshops and other Seminars
· *Depthmap-based Obstacle Detection for Visually Impaired People*, seminar given in the National Event Arte e(') Scienza (Art is Science) (2017)
· *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, 2016, 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).
	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 intergrity 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, Department of Mathematics and Computer Science, University of Catania, Italy
	Link: http://iplab.dmi.unict.it/people/
2017 – present	Centro Universitario per la Tutela e la Gestione degli Ambienti Naturali e degli Agro-Ecosistemi (CUTGANA), University of Catania, Italy
	Link: http://www.cutgana.unict.it/
2017 – present	Group for Reconstructive and Therapeutic Advancements (G.Re.T.A.)
	Link: http://greta.maurizionava.it/
2015 – 2017	TIM JOL WAVE (Joint Open Lab Wireless Applications in multi-deVice Ecosystems), Catania, Italy
	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. 2018, Breast Shape Analysis with Curvature Estimates and PCA for Cosmetic and Reconstructive Surgery of the Breast, *Aesthetic Surgery Journal*, 2018 (Accepted). (co-authored with G. Catanuto, W. Taher, N. Rocco, F. Catalano, D. Allegra, F. Stanco, G. Gallo, M.B. Nava)

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. Torrisi)

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. Torrisi)

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. Torrisi, 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) USF Ref. No.: 17A055 - *Automatic digital method for classification of colors in Munsell Color System.* (co-authored with F. Stanco, D. Tanasi)

PROFESSIONAL SERVICES

A) Journal reviewer
- Journal on Computers & Graphics (CAG)
- 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)
- IEEE International Conference on Networking, Sensing and Control (ICNSC)

AWARDS

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

CURRENT RESEARCH PROJECTS

2017 – present   *Scene Understanding and Behavioural Analysis from Egocentric Visual Data"* – Project *"Vision Exploitation for Data Interpretation (V.E.D.I.)"*, Supervisor: Dr. G.M. Farinella (University of Catania)

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)

2014 – present   *Multi device media analysis and summarization for high bandwith 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)

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)

CERTIFICATIONS
- Machine Learning by Stanford University on Coursera. Certificate earned on May 28, 2016
  - https://www.coursera.org/account/accomplishments/certificate/AP32HNBZ2V6V
- Human Research - Biomedical Investigators and Key Personnel - 1 Basic
  - Oct 2017 – Sep 2020 – License 24454552
  - Course www.citiprogram.org/verify/?w2bf2c6fe-4601-4e79-94a7-fb21f7ef962b-24454552

REFEREES
Available under request