Curriculum Vitae

(Last update November 19, 2019)

Eng. Filippo Piccinini, PhD

Born: April 20, 1985, Forlimpopoli, FC, Italy Resident: Via Pola 6/2, I-48018, Faenza, RA, Italy

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Education

	Doctor Europaeus, PhD in Information Technology
Dates	University of Bologna, Italy, 1 st January 2010 – 31 st December 2012. ETH Zurich, Switzerland, 9 th May 2011 – 26 th August 2011, 7 th May 2012 – 8 th August 2012. Defence: 19 th April 2013. Graduation Ceremony: 21 st June 2013.
Scientific field	Informatics and bioengineering
Thesis title	Solutions to common issues in widefield microscopy: vignetting, mosaicing and depth of focus.
Supervisors	Prof. Alessandro Bevilacqua (University of Bologna) Prof. Mauro Ursino (University of Bologna) Prof. Peter Horvath (ETH Zurich)
Financing	3-year-study ministerial grant and ETH Zurich grant.
	Master Degree in Biomedical Engineering, 110/110 cum LAUDE (average score pre-degree: 29.9/30)
Dates	University of Bologna, Italy, September 2007 – October 2009. Defence: 14 th October 2009.
Scientific field	Computer vision
Thesis title	Algorithm for building mosaics of partially overlapping images regarding adherent live stem cells.
Supervisor	Prof. Alessandro Bevilacqua (University of Bologna)
	Bachelor Degree in Biomedical Engineering, 110/110 cum LAUDE (average score pre-degree: 29.1/30)
Dates	University of Bologna, Italy, September 2004 – July 2007. Defence: 25 th July 2007.
Scientific field	Applied physics
Thesis title	Numerical study of dual solutions in mixed convection with viscous dissipation in a vertical conduit.
Supervisor	Prof. Stefano Lazzari (University of Bologna)
	High School Industrial Technical Diploma in Electronics and Telecommunications, 100/100

Current position

ADJUNCT PROFESSOR

Dates Faenza (RA), Italy, September 1999 – July 2004.

University of Bologna Faculty of Computer Science Faculty of Economics, Management and Statistics

and

RESEARCH FELLOW

Istituto Scientifico Romagnolo per lo Studio e la Cura dei Tumori (IRST) IRCCS Via P. Maroncelli 40, 47014, Meldola (FC), Italy Cancer Research Hospital, Medical Physics Unit

National Scientific Qualification (ASN) as Associate Professor: FIS/07 - APPLIED PHYSICS (received the 17th September 2018) National Scientific Qualification (ASN) as Associate Professor: 09/G2 – BIOENGINEERING (received the 14th May 2019)

Registry of Engineers, Chamber of Forli: Engineer ID 2786, Section: A/INF (accepted in the Chamber the 30th January 2019)

Current research:

Cancer three-dimensional (3D) multicellular aggregates, typically known as spheroids, are *in vitro* models widely used for testing drugs and radiotherapy treatments. However, experiments using 3D models are jeopardized by the data reproducibility problem. We proved that a spheroid pre-selection, based on the spheroid morphology, is needed to obtain statistical relevant data. Accordingly, we developed open-source software tools capable of performing an automatic image analysis of the spheroids, to guide researchers in performing experiments based on 3D models. Finally, we proceeded in performing high-content screening experiments using 3D cell cultures, meanwhile designing customized software for the different analyses.

Major fields of research



CANCER RESEARCH
MICROSCOPY
IMAGE PROCESSING
3D CELL CULTURES
MESENCHYMAL STROMAL CELLS
CELL SEGMENTATION AND TRACKING
MACHINE LEARNING
HIGH-CONTENT SCREENING

Research collaborations and experiences

Adjunct Professor, University of Bologna, Italy.

Dates June 8, 2017 – today.

Post-doctoral research fellow, IRST- IRCCS Cancer Research Hospital, Italy.

Dates | February 13, 2017 – today.

Post-doctoral research fellow, ARCES, University of Bologna, Italy.

Dates | April 20, 2013 – February 12 2017.

Supervisor | Prof. Alessandro Bevilacqua

UICC Technical Fellowship, Hungarian Academy of Sciences, Szeged, Hungary.

Dates | May 21, 2019 – July 27, 2019.

Supervisor | Prof. Peter Horvath.

NEUBIAS Short Term Scientific Mission, Hungarian Academy of Sciences, Szeged, Hungary.

Dates | April 30, 2018 – June 29, 2018.

Supervisor | Prof. Peter Horvath.

EACR Travel Fellowship, Hungarian Academy of Sciences, Szeged, Hungary.

Dates | May 1, 2017 – July 31, 2017.

Supervisor | Prof. Peter Horvath.

FEBS Short-Term Fellowship, Hungarian Academy of Sciences, Szeged, Hungary.

Dates | April 1, 2016 – July 31, 2016.

Supervisor | Prof. Peter Horvath.

EMBO Short-Term Fellowship, Hungarian Academy of Sciences, Szeged, Hungary.

Dates | May 17, 2015 – July 24, 2015.

Supervisor | Prof. Peter Horvath.

Light Microscopy and Screening Center, ETH Zurich, Switzerland.

Dates | May 9, 2011 – August 26, 2011; May 7, 2012 – August 8, 2012.

Supervisor | Prof. Gábor Csúcs.

Osteoarticular Regeneration Laboratory, Istituto Ortopedico Rizzoli, Bologna, Italy.

Dates | April 20, 2009 – December 31, 2015.

Supervisor Dr. Enrico Lucarelli

Laboratory of Biosciences, IRST-IRCCS, Meldola (FC), Italy.

Dates July 6, 2010 – December 31, 2015.

Supervisor | Dr. Anna Tesei

Research projects

Short description

I have been involved in the following research projects:

Project name | **DYNAMO** - 3D dynamic tumor models

Short description Validation of new approaches based on automatic microscopic image analysis for in vitro therapeutic screening and for the characterization of the invasive behaviour of cancer cells.

Collaborating institutions - Laboratory of Biosciences, IRST- IRCCS, Meldola (FC), Italy

- Computer Vision Group, University of Bologna, Italy

Duration | January 2016 - today.

Project name STAMINAL - Characterization of stem cells through support for automatic analysis of the microscopic images in pre-clinical therapy.

Development of software tools for the automatic analysis of stem cells and cancer cells, both in

Short description monolayer and multicellular spheroids.

- Laboratory of Biosciences, IRST- IRCCS, Meldola (FC), Italy

Collaborating institutions - Computer Vision Group, University of Bologna, Italy

Duration | January 2011 - December 2015.

Project name ADVANCE - Automatic non-invasive system, based on high content analysis to detect and characterize vital mesenchymal stem cells in a spatio-temporal context.

Development of software tools for the automatic analysis of mesenchymal stem cells used in

regenerative medicine for bone tissue applications.

Collaborating institutions - Osteoarticular Regeneration Laboratory, Istituto Ortopedico Rizzoli (IOR), Bologna, Italy

- Computer Vision Group, University of Bologna, Italy

Duration | January 2010 - December 2010.

Project name	CELLTRACKER – In vitro live cell tracking.
Short description	CellTracker, a free open-source software for tracking in 2D living cells. http://celltracker.website
Collaborating institutions	- Biological Image Analysis and Machine Learning Group, Biological Research Centre, Szeged, Hungary - Computer Vision Group, University of Bologna, Italy
Duration	Since May 2015.
Project name	ADVANCED CELL CLASSIFIER – Cell classification and analysis.
Short description	Advanced Cell Classifier, a free open-source software for classifying and analysing cells imaged in high content screening experiments. www.cellclassifier.org
Collaborating institutions	- Biological Image Analysis and Machine Learning Group, Biological Research Centre, Szeged, Hungary - Computer Vision Group, University of Bologna, Italy
Duration	Since April 2016.
Project name	3D-CELL-ANNOTATOR – 3D single cell segmentation.
Short description	3D-Cell-Annotator, a free open-source plugin for MITK for segmenting single cells in 3D datasets (e.g. spheroids, organoids, embryos). www.3d-cell-annotator.org
Collaborating institutions	- Biological Image Analysis and Machine Learning Group, Biological Research Centre, Szeged, Hungary - IRST IRCCS Meldola, Italy
Duration	Since May 2018.

Research groups, scientific associations and institutions



IRCCS Istituto Scientifico Romagnolo per lo Studio e la Cura dei Tumori (IRST) S.r.l., IRCCS, www.irst.emr.it Member since 2017.



Italian Mesenchymal Stem Cell Group (GISM), www.gismonline.it Founder Member since 2014.



Vittorio Tison Association, "Culture & Solidarity" ONLUS. www.associazionevittoriotison.org Member since 2019.



Advanced Research Center on Electronic Systems "E. De Castro" (ARCES), University of Bologna, Italy. www.arces.unibo.it Member since 2010.



Computer Vision Group (CVG), University of Bologna, Italy. http://cvg.deis.unibo.it Member since 2010.



Register of Engineers, Chamber of Forlì: Engineer ID 2786, Section: A/INF. www.ordineing-fc.it Member since 2019.



Associazione Volontari Italiani del Sangue (AVIS), Italian society of donors of blood. www.avisfaenza.it Member since 2009.



Italian Society of Biochemistry and Molecular Biology (SIB), www.biochimica.it Member since 2015.



Italian National Bioengineering Group (GNB), www.bioing.it Member since 2012.



Italian Association Cell Culture (ONLUS-AICC), www.onlus-aicc.org Member in 2013.



European Association for Cancer Research (EACR), www.eacr.org Member since 2015. **Ambassador since 20/04/2018**



European Light Microscopy Initiative (ELMI), http://elmi.embl.org/home Member since 2016.



Association of Union for International Cancer Control (UICC) Fellows, https://www.uicc.org Member since 2019



FigShare, store, share, discover research, https://figshare.com/. Ambassador since 23/07/2019.



Honours and awards

Technical fellowship (2 months, 2019) awarded by the Union for International Cancer Control (UICC), Biological Research Centre, Szeged, Hungary, 2019 (US\$ 2500).

Awarded by the GISM society for the contribution to the Group's activities since its establishment. In particular, for the work carried out to make effective the dissemination of scientific information. Awards ceremony held on the 5th April 2019, Genova, Italy.

Travel fellowship (2 months, 2018) awarded by the Network of European Bioimage Analysts (NEUBIAS), Biological Research Centre, Szeged, Hungary, 2018 (Eur 2000).

Travel fellowship (3 months, 2017) awarded by the European Association for Cancer Research (EACR), Biological Research Centre, Szeged, Hungary, 2017 (Eur 2000).

Awarded by the Marie Sklodowska-Curie Actions Seal of Excellence, an award to applicants of proposals submitted to the MSCA Individual Fellowships Call that scored 85% or more (obtained score 91.2%).

Winner of the local selection of FameLab 2017, the Talking Science international competition (Modena, 24th March 2017). The prize was a 3-day course (all expenses paid) with theatre directors, psychologists and famous public speakers to improve my public speaking, and access to the National Finals.

Travel Award from the Italian Embassy in Seoul, South Korea, to visit Universities/Institutes in Seoul to establish new collaborations, August 2016 (Eur 2000).

Travel Award from the Italian Society of Biochemistry and Molecular Biology (SIB), Biological Research Centre, Szeged, Hungary, July 2016 (Eur 1000)

Short-term fellowship (2 months, 2016) awarded by the Federation of European Biochemical Societies (FEBS), Biological Research Centre, Szeged, Hungary, 2016 (Eur 4000).

Candidate for the Award "Sapio Junior for the Italian Research" nominated by the Pro-Rector (teaching area) of the University of Bologna, Prof. Enrico Sangiorgi. Final ceremony: Palazzo Montecitorio, Roma, 16th March 2016.

Short-term fellowship (3 months, 2015) awarded by the European Molecular Biology Organization (EMBO), Biological Research Centre, Szeged, Hungary, 2015 (Eur 5000).

Best Oral Communication Award, awarded by the Italian Association of Cell Culture (ONLUS-AICC) 2014. Award ceremony held on 14th November 2014, Verona, Italy (Eur 500)

Selected as the representative PhD student (scientific area) to give the speech during the PhD Graduation Ceremony (21st June 2013, Santa Lucia Church, Bologna). 1200 people, including 380 PhD students, were present.

Free conference registration grant, 1st International Conference Materials in Medicine (MiMe). 8th October 8-11, 2013. Faenza (RA), Italy.

Free conference registration grant, 8th World Conference on The Future of Science. September 16-18, 2012. Venezia, Italy.

Travel Award "Marco Polo 2011" from the University of Bologna, Light Microscopy and Screening Center, ETH Zurich, Switzerland. 2011 (3500 Euros)

Best Master Thesis Award "Mario Pasquini 2010", awarded by the Marine & Freshwater Science Group Association. Awards ceremony held on the 22nd June 2010, Savoia Hotel Regency of Bologna, Italy (2500 Euros)

Scholarship "F.I.D.A.", for university merits for the academic years 2004/2005 and from 2006/2007 to 2008/2009, granted by Fondo Integrativo Di Assistenza of Ravenna, Italy (2000 Euros).

Scholarship "Homo Sapiens Sapiens", for university merits for the academic year 2004/2005, granted by I.N.P.D.A.P. Rome, Italy, on the 7th November 2007 (1000 Euros).

Scholarship "F.I.D.A.", for school merits for the school years from 1999/2000 to 2002/2003, granted by Fondo Integrativo Di Assistenza of Ravenna, Italy (800 Euros).

Publication statistics

Peer reviewed scientific articles:	47
- Journal publications (with IF):	27
- Journal publications (without IF):	3
- Conference proceedings:	16
First author publications (in journals with IF):	15
Last author publications (in journals with IF):	3
Corresponding author publications (in journal with IF):	5
Total impact:	161.2400 IF
Average impact:	5.9719 IF

Average impact: 5.9719
Total number of citations (SCOPUS): 621
H-index (SCOPUS): 11

Publications

International Journals (with official IF)

M. Harmati, E. Gyukity-Sebestyen, G. Dobra, L. Janovak, I. Dekany, O. Saydam, E. Hunyadi-Gulyas, I. Nagy, A. Farkas, T. Pankotai, Z. Ujfaludi, P. Horvath, F. Piccinini, M. Kovacs, T. Biro, K. Buzas, *Small extracellular vesicles convey the stress-induced adaptive responses of melanoma cells*. **Scientific Reports**, 9: 15329, October 2016. DOI: 10.1038/s41598-019-51778-6.

J. Bulgarelli, M. Tazzari, A.M. Granato, L. Ridolfi, S. Maiocchi, F. de Rosa, M. Petrini, E. Pancisi, G. Gentili, B. Vergani, F. Piccinini, A. Carbonaro, B.E. Leone, G. Foschi, V. Ancarani, M. Framarini, M. Guidoboni. *Dendritic cell vaccination in metastatic melanoma turns "non-T cell inflamed" into "T-cell inflamed" tumors*. **Frontiers in Immunology**, 10:2353, October 2019, DOI: 10.3389/fimmu.2019.02353.

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- A. Sarnelli, E. Mezzenga, A. Vagheggini, F. Piccinini, G. Feliciani, M.L. Belli, F. Monti, M. Cremonesi, C. Cittanti, G. Martinelli, G. Paganelli. *Texture analysis in 177Lu SPECT phantom images: Statistical assessment of uniformity requirements using texture features*. **PLoS ONE**, 14(7):e0218814, July 2019, DOI: 10.1371/journal.pone.0218814.
- I. De Santis, E. Tasnadi, P. Horvath, A. Bevilacqua, F. Piccinini. *Open-source tools for volume* estimation of 3D multicellular aggregates. **Applied Sciences**, 9(8):1616, April 2019, DOI: 10.3390/app9081616.
- F. Piccinini, I. De Santis, A. Bevilacqua. *Advances in cancer modeling: fluidic systems for increasing representativeness of large 3D multicellular spheroids*. **BioTechniques**, 65(6):312-314, November 2018, DOI: 10.2144/btn-2018-0153. IF(2018): 1.659/Q4.
- N. Carragher, F. Piccinini, A. Tesei, O.J. Trask Jr, M. Bickle, P. Horvath. *Concerns, challenges and promises of high-content analysis of 3D cellular models*. **Nature Reviews Drug Discovery**, 17(8):606, July 2018. DOI: 10.1038/nrd.2018.99. IF(2018): 57.618/Q1.
- K. Smith, F. Piccinini, T. Balassa, K. Koos, T. Danka, H. Azizpour, P. Horvath. *Phenotypic image*analysis software tools for exploring and understanding big image data from cell-based assays. **Cell Systems**, 6(6):636-653, June 2018. DOI: 10.1016/j.cels.2018.06.001. IF(2018): 8.640/Q1.
- F. Piccinini, A. Bevilacqua. *Colour vignetting correction for microscopy image mosaics used for quantitative analyses*. **BioMed Research International**, 2018:7082154, June 2018. DOI: 10.1155/2018/7082154. IF(2018): 2.197/Q3.
- G. Gallerani, C. Cocchi, M. Bocchini, F. Piccinini, F. Fabbri. *Characterization of tumor cells using a medical wire for capturing circulating tumor cells: a 3D approach based on immunofluorescence and DNA FISH*. **Journal of Visualized Experiments**, 130:e56936, December 2017. DOI: 10.3791/56936. IF(2017): 1.184/Q3.
- C. Arienti, S. Pignatta, M. Zanoni, M. Cortesi, A. Zamagni, F. Piccinini, A. Tesei. Looking for driver pathways of acquired resistance to targeted therapy: drug resistant subclone generation and sensitivity restoring by gene knock-down. Journal of Visualized Experiments, 130:e56583, December 2017. DOI: 10.3791/56583. IF(2017): 1.184/Q3.
- F. Piccinini, A. Tesei, M. Zanoni, A. Bevilacqua, *ReViMS: Software tool for estimating the volumes of*3-D multicellular spheroids imaged using a light sheet fluorescence microscope. **BioTechniques**,
 63(5):227-229, November 2017. DOI: 10.2144/000114609. IF(2017): 2.098/Q4.
- S. Duchi*, F. Piccinini*, M. Pierini, A. Bevilacqua, M.L. Torre, E. Lucarelli, S. Santi, *A new holistic 3D non-invasive analysis of cellular distribution and motility on fibroin-alginate microcarriers using light sheet fluorescent microscopy.* **PLoS ONE**, 12(8):e0183336, August 2017. DOI: 10.1371/journal.pone.0183336. IF(2017): 2.766/Q2.
- F. Piccinini*, A. Tesei*, C. Arienti, A. Bevilacqua, *Cell counting and viability assessment of 2D and 3D cell cultures: expected reliability of the Trypan Blue assay.* **Biological Procedures Online**, 19(8):1-12, July 2017. DOI: 10.1186/s12575-017-0056-3. IF(2017): 3.581/Q1.
- F. Piccinini*, T. Balassa*, A. Szkalisity, C. Molnar, L. Paavolainen, K. Kujala, K. Buzas, M. Sarazova, V. Pietiainen, U. Kutay, K. Smith, P. Horvath, *Advanced Cell Classifier: user-friendly machine-learning-based software for discovering phenotypes in high-content imaging data*. **Cell Systems**, 4(6):651–655, June 2017. DOI: 10.1016/j.cels.2017.05.012. IF(2017): 8.982/Q1.
- F. Piccinini, A. Tesei, A. Bevilacqua, Single-image based methods used for non-invasive volume estimation of cancer spheroids: a practical assessing approach based on entry-level equipment.

 Computer Methods and Programs in Biomedicine, 135: 51-60, October 2016. DOI: 10.1016/j.cmpb.2016.07.024. IF(2016): 2.503/Q1.
- C. Bellotti, S. Duchi, A. Bevilacqua, E. Lucarelli, F. Piccinini, Long term morphological characterization of Mesenchymal Stromal Cells 3D spheroids built with a rapid method based on entry-level equipment. Cytotechnology, 68(6):2479-2490, December 2016. DOI: 10.1007/s10616-016-9969-y. IF(2016): 1.857/Q3.

- M. Zanoni, F. Piccinini, C. Arienti, A. Zamagni, S. Santi, R. Polico, A. Bevilacqua, A. Tesei, 3D tumor spheroid models for in vitro therapeutic screening: a systematic approach to enhance the biological relevance of data obtained. Scientific Reports, 6: 19103, January 2016. DOI: 10.1038/srep19103. IF(2016): 4.259/Q1.
- F. Piccinini*, A. Kiss*, P. Horvath, *CellTracker (not only) for dummies*. **Bioinformatics**, 36(6): 955–957, March 2016. DOI: 10.1093/bioinformatics/btv686. IF(2016): 7.307/Q1.
- K. Smith, Y. Li, F. Piccinini, G. Csucs, C. Balazs, A. Bevilacqua, P. Horvath, *CIDRE: an illumination-correction method for optical microscopy*. **Nature Methods**, 12(5): 404-406, May 2015. DOI: 10.1038/nmeth.3323. IF(2015): 25.328/Q1.
- F. Piccinini, *AnaSP: a software suite for automatic image analysis of multicellular spheroids*.

 Computer Methods and Programs in Biomedicine, 119(1): 43–52, April 2015. DOI: 10.1016/j.cmpb.2015.02.006. IF(2015): 25.328/Q1.
- F. Piccinini, A. Tesei, C. Arienti, A. Bevilacqua, *Cancer multicellular spheroids: Volume assessment from a single 2D projection*. **Computer Methods and Programs in Biomedicine**, 118(2): 95–106, February 2015. DOI: 10.1016/j.cmpb.2014.12.003. IF(2015): 1.862/Q1.
- F. Piccinini, A. Tesei, G. Paganelli, W. Zoli, A. Bevilacqua, *Improving reliability of live/dead cell* counting through automated image mosaicing. **Computer Methods and Programs in Biomedicine**, 117(3):448-463, December 2014. DOI: 10.1016/j.cmpb.2014.09.004. IF(2014): 1.897/Q1.
 - F. Piccinini, M. Pierini, E. Lucarelli, A. Bevilacqua, *Semi-quantitative monitoring of confluence of adherent mesenchymal stromal cells on calcium-phosphate granules by using widefield microscopy images.* **Journal of Materials Science: Materials in Medicine**, 25(10):2395-2410, October 2014. DOI: 10.1007/s10856-014-5242-0. IF(2014): 2.587/Q2.
- F. Piccinini, E. Lucarelli, A. Gherardi, A. Bevilacqua, *Automated image mosaics by non-automated light microscopes: the MicroMos software tool.* **Journal of Microscopy**, 252(3):226-250, December 2013. DOI: 10.1111/jmi.12084. IF(2013): 2.150/Q2.
- Z. Bulj, S. Duchi, A. Bevilacqua, A. Gherardi, B. Dozza, F. Piccinini, G. A. Mariani, E. Lucarelli, S. Giannini, D. Donati, S. Marmiroli, *Protein kinase B/AKT isoform 2 drives migration of human mesenchymal stem cells.* International Journal of Oncology, 42(1):118-126, January 2013. DOI: 10.3892/ijo.2012.1700. IF(2013): 2.773/Q2.
- F. Piccinini, A. Tesei, W. Zoli, A. Bevilacqua, Extended depth of focus in optical microscopy:

 assessment of existing methods and a new proposal. Microscopy Research and Technique,
 15(11):1582-1592, December 2012. DOI: 10.1002/jemt.22104. IF(2012): 1.593/Q2.
 - F. Piccinini, E. Lucarelli, A. Gherardi, A. Bevilacqua, *Multi-image based method to correct vignetting effect in light microscopy images*. **Journal of Microscopy**, 248(1):6-22, October 2012. DOI: 10.1111/j.1365-2818.2012.03645.x. IF(2012): 1.633/Q3.

International Journals (without official IF)

1

- R. Reda, F. Piccinini, A. Carbonaro, *Semantic modelling of smart healthcare data*. In: Arai K., Kapoor S., Bhatia R. (eds) **Intelligent Systems and Applications. IntelliSys 2018. Advances in Intelligent Systems and Computing, Springer, Cham**, 869:399-411. November 2018. DOI: 10.1007/978-3-030-01057-7_32
- A. Carbonaro, F. Piccinini, R. Reda. *Integrating heterogeneous data of healthcare devices to enable domain data management*. **Journal of e-Learning and Knowledge Society**, 14(1):45-56, January 2018. DOI: 10.20368/1971-8829/1450. ISSN: 1826-6223
 - F. Piccinini, A. Tesei, W. Zoli, A. Bevilacqua, *Extending the Universal Quality Index to assess N-image fusion in light microscopy*. **International Journal of Bioelectromagnetism**, 14(4):217-222, December 2012. ISSN: 1456-7857

International Conference Proceedings

- R. Reda, F. Piccinini, A. Carbonaro, *Semantic modelling of smart healthcare data*. In Proceedings of the Intelligent Systems Conference 2018 (IntelliSys2018), London, England, September 6-7, 2018, pp. 399-411
- A. Carbonaro, F. Piccinini, R. Reda, Semantic description of healthcare devices to enable data integration. In Proceedings of the 15th International Conference on Information Technology: New Generations (ITNG 2018), Las Vegas, Nevada, USA, April 16-18, 2018, pp. 627-630
- R. Reda, F. Piccinini, A. Carbonaro, *Towards consistent data representation in the IoT healthcare*14 *landscape*. In Proceedings of the 8th International Digital Health Conference (DH'18), Lyon, France,
 April 23-26, 2018, pp. 1-6
- F. Piccinini, A. Tesei, W. Zoli, A. Bevilacqua, *Image processing method for 3D volume rendering from one 2D projection: application to cancer spheroid.* In Proceedings of the 4th IEEE International Conference on Image Processing Theory, Tools and Applications (IPTA), Paris, France, October 14-17, 2014, pp. 105-110
- F. Piccinini, A. Bevilacqua, K. Smith, P. Horvath, *Vignetting and photo-bleaching correction in automated fluorescence microscopy from an array of overlapping images*. In Proceedings of the 10th IEEE International Symposium on Biomedical Imaging (ISBI), San Francisco, CA, USA, April 7-11, 2013, pp. 464-467
- A. Bevilacqua, F. Piccinini, *Is an empty field the best reference to correct vignetting in microscopy?* In Proceedings of the 7th International Workshop on Biosignal Interpretation (BSI), Como, Italy, July 2-4, 2012, pp. 267-270
- F. Piccinini, A. Tesei, W. Zoli, L. Carozza, D. Pollini and A. Bevilacqua, *Extending the Universal Quality*Index to assess N-image fusion in optical microscopy. In Proceedings of the 7th International
 Workshop on Biosignal Interpretation (BSI), Como, Italy, July 2-4, 2012, pp. 259-262
- L. Carozza, A. Bevilacqua, F. Piccinini, Mosaicing of optical microscope imagery based on visual
 information. In Proceedings of the 33rd Annual International Conference of the IEEE Engineering in
 Medicine and Biology Society (EMBS), Boston, USA, August 30 September 3, 2011, pp. 6162-6165
- A. Bevilacqua, F. Piccinini, A. Gherardi, *Vignetting correction by exploiting an optical microscopy*8 *image sequence*. In Proceedings of the 33rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS), Boston, USA, August 30 September 3, 2011, pp. 6166-6169
- A. Gherardi, A. Bevilacqua, F. Piccinini, *Illumination field estimation through background detection in optical microscopy.* In Proceedings of the 8th annual IEEE Symposium on Computational Intelligence in Bioinformatics and Computational Biology (CIBCB), Paris, France, April 11-15, 2011, pp. 49-54
 - L. Carozza, A. Bevilacqua, F. Piccinini, *An incremental method for mosaicing of optical microscope imagery.* In Proceedings of the 8th annual IEEE Symposium on Computational Intelligence in Bioinformatics and Computational Biology (CIBCB), Paris, France, April 11-15, 2011, pp. 55-60
- A. Bevilacqua, A. Gherardi, F. Piccinini, *Multichannel image mosaicing of stem cells*. In Proceedings of the International Conference on Biological Science and Engineering (ICBSE), Venice, Italy, November 24-26, 2010, pp. 271-274
- A. Bevilacqua, A. Gherardi, L. Carozza, F. Piccinini, *Semi-automatic background detection in microscopic images*. In Proceedings of the International Conference on Biological Science and Engineering (ICBSE), Venice, Italy, November 24-26, 2010, pp. 275-278
- A. Bevilacqua, A. Gherardi, F. Piccinini, *On-line image mosaicing of live stem cells*. In Proceedings of the International Conference on Biological Science and Engineering (ICBSE), Venice, Italy, November 24-26, 2010, pp. 279-282
- A. Bevilacqua, A. Gherardi, F. Piccinini, *Quantitative quality assessment of microscopic image* mosaicing. In Proceedings of the International Conference on Biological Science and Engineering (ICBSE), Venice, Italy, November 24-26, 2010, pp. 283-286
 - S. Lazzari, A. Barletta, E. Magyari, F. Piccinini, *Dual solutions for viscous mixed convection flows in a vertical circular duct: a numerical benchmark*. In Proceedings of the European Comsol Conference 2007, Grenoble (Paris), France, October 23-24, 2007, pp. 343-349

Abstracts and Posters at International Conferences

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- E. Tasnadi, T. Toth, M. Kovacs, A. Diosdi, F. Pampaloni, J. Molnar, F. Piccinini, P. Horvath. 3D-Cell-Annotator: an open-source active surface tool for single cell segmentation in 3D microscopy images. 4th EACR Conference Goodbye Flat Biology, Berlin, Germany, November 10-13, 2019 (pag. 123)
 - A. Diosdi, D. Hirling, T. Toth, M. Kovacs, M. Harmati, K. Koos, K. Buzas, F. Piccinini, P. Horvath.

 Metric-based solutions to identify the best optical clearing protocol for single cell spheroid analysis.

 4th EACR Conference Goodbye Flat Biology, Berlin, Germany, November 10-13, 2019 (pag. 66)
 - T. Balassa, F. Piccinini, A. Szkalisity, E. Tasnadi, T. Toth, C. Molnar, L. Paavolainen, M. Kovacs, M. Harmati, K. Buzas, P. Horvath. *ADVANCED CELL CLASSIFIER: an open-source cell classification tool*. Workshop on High Content Imaging and Data Science for Virtual Screening and Drug Discovery, Bled, Slovenia, May 13-17, 2019
 - E. Tasnadi, F. Piccinini, T. Toth, M. Kovacs, F. Pampaloni, P. Horvath. *BIOMAG3DANALYSER: a user-friendly software tool for annotating cells in three-dimension datasets*. 3rd Network of European Biolmage Analysts (NEUBIAS), Luxembourg City, Luxembourg, February 2-8, 2019
- T. Toth, M. Kovacs, M. Harmati, E. Tasnadi, K. Koos, V. Pietiainen, K. Buzas, F. Piccinini, P. Horvath, *A high content screening platform for the analysis of 3D spheroids at single cell-level.* 3rd European Association for Cancer Research (EACR) conference Goodbye Flat Biology, Berlin, Germany, September 9-12, 2018
 - S. Pignatta, L. Zamai, C. Arienti, C. Cocchi, M. Zanoni, M. Cortesi, A. Sarnelli, D. Arpa, F. Piccinini, A. Tesei, *Starvation-induced metabolic changing: a boost for radiotherapy treatment in cancer?*European Association Cancer Research (EACR): Mechanisms to Therapies: Innovations in Cancer Metabolism, Bilbao, Spain, October 9-11, 2018
- G. Gallerani, A. Delmonte, C. Cocchi, M. Bocchini, F. Piccinini, M. Burgio, C. Casadei, A. Rocca, F. Fabbri, Feasibility investigation of EML4-ALK rearrangements in mNSCLC CTCs using a new in vivo procedure. American Association for Cancer Research (AACR) Annual Meeting, Chicago, America, April 14-18, 2018
- M. Zanoni, F. Piccinini, C. Arienti, A. Zamagni, S. Santi, A. Bevilacqua, A. Tesei, *Simple strategies to increase the biological significance of a cytotoxic test based on 3D cell cultures*. 2nd European Association for Cancer Research (EACR) conference Goodbye Flat Biology, Berlin, Germany, October 2-5, 2016
- F. Piccinini, A. Tesei, C. Arienti, S. Duchi, A. Bevilacqua, *Cell proliferation in 3D cancer spheroids: Volume assessment and 3D reconstruction from a single 2D projection*. 5th International Satellite

 Symposium Italian Mesenchymal Stem Cell Group (GISM), Verona, Italy, November 12-14, 2014
- F. Piccinini, M. Pierini, E. Lucarelli, A. Bevilacqua, *Extending the field of view microscope's camera using a video of images*. Materials in Medicine International Conference (MiMe), Faenza (RA), Italy, October 8-11, 2013
- A. Bevilacqua, W. Zoli, F. Piccinini, A. Tesei, *Extension of the Microscope's Depth of Focus*. 2nd International Conference Translational Research in Oncology: a New Approach to Personalized Medicine, Forlì, Italy, May 8-11, 2012

Abstracts and Posters at National Conferences

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- F. Piccinini, T. Balassa, A. Szkalisity, E. Tasnadi, T. Toth, C. Molnar, L. Paavolainen, M. Kovacs, M. Harmati, K. Buzas, P. Horvath, *Advanced Cell Classifier: an open-source machine-learning tool useful for mesenchymal stem cell classification*. 4th Annual Meeting of the Italian Mesenchymal Stem Cell Group (GISM), Genova, Italy, April 04-05, 2019 (pag. 22)
- F. Piccinini, S. Santi, S. Duchi, I. De Santis, A. Bevilacqua, *F-Tracker3D: tracking fluorescent cells in three dimensions*. 3rd Annual Meeting of the Italian Mesenchymal Stem Cell Group (GISM), Assisi, Italy, April 12-13, 2018 (pag. 72)
- I. De Santis, M. Zanoni, C. Bellotti, E. Lucarelli, F. Piccinini*, A. Tesei*, A. Bevilacqua*, 3D multicellular spheroids: regularization time for obtaining a homogeneous model. 3rd Annual Meeting of the Italian Mesenchymal Stem Cell Group (GISM), Assisi, Italy, April 12-13, 2018 (pag. 53)
- F. Piccinini, E. Lucarelli, A. Bevilacqua, *MicroMos: an open source software tool to obtain high-*resolution panoramic images of 2D cell cultures. 2nd Annual Meeting of the Italian Mesenchymal Stem Cell Group (GISM), Brescia, Italy, October 20-21, 2016 (pag. 42)

- A. Bevilacqua, F. Piccinini, M. Zanoni, A. Tesei, Comparison of methods to generate multicellular spheroids with characteristics compliant with 3D high-content screening experiments. 2nd Annual Meeting of the Italian Mesenchymal Stem Cell Group (GISM), Brescia, Italy, October 20-21, 2016 (pag. 66)
- F. Piccinini, C. Bellotti, S. Duchi, E. Lucarelli, A. Bevilacqua, *Over time homogeneity and stability of mesenchymal stromal cells 3D spheroids built using base-level laboratory equipment*. 1st Annual Meeting of the Italian Mesenchymal Stem Cell Group (GISM), Brescia, Italy, October 8-9, 2015
- F. Piccinini, S. Duchi, E. Martella, G. Alessandri, E. Lucarelli, A. Bevilacqua, *In vitro quantitative* analysis of mesenchymal stromal cells migration towards tumours. 1st Annual Meeting of the Italian Mesenchymal Stem Cell Group (GISM), Brescia, Italy, October 8-9, 2015
- F. Piccinini, M. Zanoni, A. Bevilacqua, A. Tesei, *Shape-based viability of 3D multicellular spheroids*. 1st Annual Meeting of the Italian Mesenchymal Stem Cell Group (GISM), Brescia, Italy, October 8-9, 2015
- F. Piccinini, I. De Santis, D. Angeli, A. Bevilacqua, *AnaSP: a software suite to automatically analyse*spheroid used in high throughput experiments. 27th annual conference Italian Association Cell Culture (ONLUS-AICC), Verona, Italy, November 12-14, 2014
- F. Piccinini, D. Angeli, I. De Santis, A. Tesei, C. Arienti, A. Bevilacqua, *Cell viability and culture* population: Statistical analysis of precision of Trypan Blue assay. 27th annual conference Italian
 Association Cell Culture (ONLUS-AICC), Verona, Italy, November 12-14, 2014
- F. Piccinini, A. Tesei, W. Zoli, A. Bevilacqua, *Cancer multicellular aggregates: volume reconstruction* from a single 2D projection. 4th Congress Italian National Bioengineering Group (GNB 2014), Pavia, Italy, June 25-27, 2014
- F. Piccinini, A. Tesei, G. Paganelli, W. Zoli, A. Bevilacqua, *GridMos: a fully-automatic mosaicing method for improving precision and repeatability of manual cell counting*. 26th annual conference Italian Association Cell Culture (ONLUS-AICC), Brescia, Italy, November 20-22, 2013
- F. Piccinini, M. Pierini, E. Lucarelli, A. Bevilacqua, *Semi-quantitative monitoring of adhesion of mesenchymal stromal cells on calcium-phosphate granules through a computer vision system*. 26th annual congress Italian Association Cell Culture (ONLUS-AICC), Brescia, Italy, November 20-22, 2013

Invited presentations

- Title: "Advanced Cell Classifier: an open-source machine-learning tool useful for mesenchymal stem cell classification". Date: 04/04/2019. Location: 4th Annual Meeting of the Italian Mesenchymal Stem Cell Group (GISM), Genova, Italy. Time: 10 min.
- Title: "Semantic modelling of smart healthcare data". Data: 07/09/2018. Location: Intelligent Systems Conference 2018 (IntelliSys2018), London, UK. Time: 15 min.
- Title: "Towards consistent data representation in the IoT healthcare landscape". Data: 24/04/2018. Location: 8th International Digital Health Conference (DH'18), Lyon, France. Time: 15 min.
- Title: "3D cell cultures, from generation to analysis, today and tomorrow". Mini-symposium series:
 "3D cell cultures: present and future". Date: 02/08/2018. Location: Biological Research Centre,
 Hungarian Academy of Sciences, Szeged, Hungary. Time: 30 min. Invitation from: Prof. Peter
 Horvath.
- Title: "Image processing tools and software applications to improve the research output in Biology and Microscopy". Date: 21/02/2017. Location: Istituto Scientifico Romagnolo per lo Studio e la Cura dei Tumori (IRST) IRCCS, Meldola (FC), Italy. Time: 30 min. Invitation from: Prof. Dino Amadori.
- Title: "Quantitative microscopy using 3D multicellular spheroids: generation, imaging, and analysis".

 Location: Presentations sponsored by the Italian Embassy in Seoul, South Korea. 30th August 2016 to Samsung Medical Center, 31st August 2016 to Yonsei University, 02nd September 2016 to Medicinal Bioconvergence Research Center, Seoul, South Korea. Time: 1 h.
- Title: "How to write a scientific article". Date: 11/05/2016. Location: Biological Research Centre,
 Hungarian Academy of Sciences, Szeged, Hungary. Time: 60 min. Invitation from: Prof. Peter Horvath.
- Title: "The right microscope for the right sample". Date: 01/12/2015. Audience: Master students of the course BioChemistry, Biomedical Engineering. Location: School of Engineering, Cesena, University of Bologna. Time: 3 h. Invitation from: Prof. Emanuele Giordano.

- Title: "Over time homogeneity and stability of mesenchymal stromal cells 3D spheroids built using base-level laboratory equipment". Date: 08/10/2015. Location: 1st Annual Meeting of the Italian Mesenchymal Stem Cell Group (GISM), Brescia, Italy.
- Title: "Microscope limits and 3D cell cultures". Date: 21/05/2015. Location: Biological Research Centre, Hungarian Academy of Sciences. Location: Szeged, Hungary. Time: 30 min. Invitation from: Prof. Peter Horvath.
- Title: "The right microscope for the right sample". Date: 27/11/2014. Audience: Master students of the course BioChemistry, Biomedical Engineering. Location: School of Engineering, Cesena, University of Bologna. Time: 2 h. Invitation from: Prof. Emanuele Giordano.
- Title: "Cell proliferation in 3D cancer spheroids: volume assessment and 3D reconstruction from a single 2D projection". Date: 14/11/2014. Location: 27th annual congress Italian Association Cell Culture (ONLUS-AICC), Verona, Italy.
- Title: "Image processing method for 3D volume rendering from one 2D projection: application to cancer spheroids". Date: 15/10/2014. Location: 4th IEEE International Conference on Image Processing Theory, Tools and Applications (IPTA), Paris, France.
- Title: "Extending the field of view microscope's camera using a video of images". Date: 08/10/2013. Location: 1st International Conference Materials in Medicine (MiMe), Faenza (RA), Italy.
- Title: "Solutions to common issues in widefield microscopy: vignetting, mosaicing and depth of focus". Date: 14/05/2013. Audience: PhD Students in BioEngineering. Location: School of Engineering, Cesena, University of Bologna. Time: 1 h. Invitation from: Prof. Stefano Severi.
- Title: "Some selected research activities". Date: 10/05/2011. Audience: Researchers of Light

 Microscopy and Screening Center, ETH Zurich, Switzerland. Location: ETH Zurich. Time: 1 h. Invitation from: Prof. Peter Horvath.
- Title: "PET and SPECT". Date: 01/04/2011. Audience: Master students of the course BioImages,
 Biomedical Engineering. Location: School of Engineering, Cesena, University of Bologna. Time: 1 h.
 Invitation from: Prof. Alessandro Bevilacqua.

Commissions of trust

Editorial Board member

Pharmaceutical Sciences and Biomedical Analysis Journal, Scientific Literature,

Member since 01/09/2017

http://scientificliterature.org/pharmaceutical-sciences-editorial-board.html

Current Updates in Stem Cell Research and Therapy, OPR Science,

Member since 01/02/2017

http://oprscience.com/department/current-updates-in-stem-cell-research-and-therapy/

Biomedical Statistics and Informatics, Science Publishing Group,

Member since 28/11/2016

http://www.sciencepublishinggroup.com/j/bsi

SL Clinical And Medical Oncology, Scientific Literature,

Member since 01/11/2016

http://www.scientificliterature.org/oncology-editorial-board.html#

Reviewer for

Analytical Biochemistry: Methods in the Biological Sciences, Elsevier, ISSN: 0003-2697

ASSAY and Drug Development Technologies, Mary Ann Liebert, Inc., ISSN:1540-658X Biomedical Signal Processing and Control (BSPC), Elsevier. ISSN:1746-8094

J. of Biomaterials and Tissue Engineering (JBT), American Scientific Publishers, ISSN:2157-9083

Biological Procedures Online, BioMed Central, ISSN: 1480-9222

Micron, Elsevier. ISSN:0968-4328

Microscopy Research and Technique (MRT), John Wiley & Sons, Inc. ISSN:1097-0029

Signal, Image and Video Processing (SIVP), Springer. ISSN:1863-1711

Computer Methods and Programs in Biomedicine (CMPB), Elsevier, ISSN:0169-2607

Artificial Intelligence in Medicine, Elsevier, ISSN:0933-3657

Organisation of conferences/congresses/meetings

4th National School of Microscopy, April 14-17, 2019, IRST IRCCS, Meldola (FC), Italy (www.scuoladimicroscopia.it)

4th Italian Mesenchymal Stem Cell Group annual meeting, April 4-5, 2019, Centro Congressi IST Nord - Ospedale Policlinico San Martino, Genova, Italy (*www.gismonline.it*)

3rd Italian Mesenchymal Stem Cell Group annual meeting, April 12-13, 2018, Palazzo del Monte Frumentario, Assisi, Italy (*www.gismonline.it*)

3rd **National School of Microscopy**, October 12-14, 2016, Orthopaedic Rizzoli Institute, Bologna, Italy (www.scuoladimicroscopia.it)

2nd Italian Mesenchymal Stem Cell Group annual meeting, October 20-21, 2016, Centre Pastorale Paolo VI, Brescia, Italy (*www.gismonline.it*)

1st Italian Mesenchymal Stem Cell Group annual meeting, October 8-9, 2015, Centre Pastorale Paolo VI, Brescia, Italy (www.gismonline.it)

Teaching activities (as Professor)

Course	Adjunct Professor, 76528-Laboratory of Computer Programming CLEF (teaching language: English), Faculty of Economics, Management and Statistics - Bologna, University of Bologna,
Date	2019/2020, first cycle, second year, bachelor degree.
Notes	Programming language used: R.
Course	Adjunct Professor, 00819-Programming (Module 2), Faculty of Computer Science - Cesena, University of Bologna,
Date	2019/2020, first cycle, first year, bachelor degree.
Notes	Programming language used: C.
Course	Adjunct Professor, 76528-Laboratory of Computer Programming CLEF (teaching language: English), Faculty of Economics, Management and Statistics - Bologna, University of Bologna,
Date	2018/2019, first cycle, second year, bachelor degree.
Notes	Programming language used: R.
Course	Adjunct Professor, 76528-Laboratory of Computer Programming QF (teaching language: English), Faculty of Economics, Management and Statistics - Bologna, University of Bologna,
Date	2018/2019, third cycle, first year, master degree.
Notes	Programming language used: Python.
Course	Adjunct Professor, 00819-Programming (A-L) (Module 2), Faculty of Computer Science - Cesena, University of Bologna,
Date	2018/2019, first cycle, first year, bachelor degree.
Notes	Programming language used: C.
Course	Adjunct Professor, 76528-Laboratory of Computer Programming QF (teaching language: English), Faculty of Economics, Management and Statistics - Bologna, University of Bologna,

Date 2017/2018, third cycle, first year, master degree.

Notes Programming language used: Python.

Course Adjunct Professor, 00819-Programming (A-L) (Module 2), Faculty of Computer Science - Cesena, University of Bologna, 2017/2018, first cycle, first year, bachelor degree.

Notes Programming language used: C.

Teaching activities (as Tutor)

Tutor, 18067-Informatics, Course Faculty of Economics, Management and Statistics - Forlì, University of Bologna, Prof. Mauro Gaspari. 2019/2020, first cycle, first year, bachelor degree. Date Tutor, 18067-Informatics, Course Faculty of Economics, Management and Statistics - Forlì, University of Bologna, Prof. Mauro Gaspari. Date 2018/2019, first cycle, first year, bachelor degree. Tutor, 18067-Informatics, Course Faculty of Economics, Management and Statistics - Forlì, University of Bologna, Prof. Mauro Gaspari. 2017/2018, first cycle, first year, bachelor degree. Date Tutor, 18067-Informatics, Course Faculty of Economics, Management and Statistics - Forlì, University of Bologna, Prof. Mauro Gaspari. Date 2016/2017, first cycle, first year, bachelor degree. Tutor, 29227-Informatics, Course Mechanical Engineering - Bologna, University of Bologna, Prof. Ruben Scardovelli. Date 2016/2017, first cycle, second year, bachelor degree. Notes Programming language used: C. Tutor, 29227-Informatics, Course Mechanical Engineering - Bologna, University of Bologna, Prof. Ruben Scardovelli. 2015/2016, first cycle, second year, bachelor degree. Date **Notes** Programming language used: C. Tutor, 29227-Informatics, Course Mechanical Engineering - Bologna, University of Bologna, Prof. Jorge Eduardo Fernandez. 2015/2016, first cycle, second year, bachelor degree. Date Programming language used: FORTRAN. Notes

Teaching activities (other)

Teaching Assistant | Tutor DM198/2003, Biomedical Engineering - Cesena, University of Bologna.

Date | 2008/2009

Notes 200 hours of assistance in teaching activities for courses without dedicated tutors.

High school teaching | Public secondary school teacher.

Dates | Several substitutions in the period 2005 – 2013.

Page 15/23 Curriculum Vitae of: Filippo Piccinini

Notes

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Teacher in several high school institutes for laboratory of the following courses: Physics, Chemistry, Mathematics, Informatics, Electronics, Electrotechnics.

Visiting researchers

Ervin Tasnadi, PhD Student in Computer Vision, Biological Research Centre (BRC), Hungarian Academy of Sciences, Szeged, Hungary; Topic: development of an application to segment and 3 annotate single cells in 3D multicellular aggregates; Home-supervisor: Prof. Peter Horvath. Location: IRST IRCCS, Meldola (FC), Italy; Date of the stay: 27/08/2018-07/09/2018

Maria Harmati, PhD Student in Biology, Biological Research Centre (BRC), Hungarian Academy of Sciences, Szeged, Hungary; Topic: testing of several systems for the generation of cancer multicellular spheroids; Home-supervisor: Prof. Krisztina Buzas.

Location: IRST IRCCS, Meldola (FC), Italy; Date of the stay: 05/11/2017-29/11/2017

Timea Toth, PhD Student in Bio-Engineering, Biological Research Centre (BRC), Hungarian Academy of Sciences, Szeged, Hungary; Topic: analysis of tools for extracting data from cancer multicellular spheroids; Home-supervisor: Prof. Peter Horvath.

Location: IRST IRCCS, Meldola (FC), Italy; Date of the stay: 05/11/2017-29/11/2017

works

Stefano Belli, University of Bologna, School of Computer Sciences, MS thesis, title: Studio e realizzazione di un plugin per l'allineamento di immagini microscopiche. Supervisor: Antonella 11 Carbonaro. Co-supervisors: Filippo Piccinini. Thesis defence: 10th October 2019

Roberto Reda, University of Bologna, School of Computer Sciences, MS thesis, title: A semantic web approach to ontology-based system: integrating, sharing and analysing IOT health and fitness data. Supervisor: Antonella Carbonaro. Co-supervisors: Filippo Piccinini. Final score: 110 cum Laude. Thesis defence: 15th December 2017

Ilaria De Santis, University of Bologna, School of Biological Sciences, BS thesis, title: Confronto di sistemi per creazione in vitro di aggregati multicellulari tumorali: analisi bio-statistica. Supervisor: Fulvia Farabegoli. Co-supervisors: Alessandro Bevilacqua, Anna Tesei, Filippo Piccinini. Final score: 110 cum Laude. Thesis defence: 16th July 2014

Angeli Davide, University of Bologna, School of Biological Sciences, BS thesis, title: Sferoidi multicellulari creati in vitro via bioreattore: studio a breve e medio termine della omogeneità. Supervisor: Fulvia Farabegoli. Co-supervisors: Alessandro Bevilacqua, Wainer Zoli, Filippo Piccinini. Final score: 110 cum Laude. Thesis defence: 16th July 2014

Luigi Caiffa, University of Bologna, Faculty of Biomedical Engineering, MS thesis, title: Studio di classi di sferoidi multicellulari di carcinoma polmonare epidermoidale in radiobiologia. Supervisor: Alessandro Bevilacqua. Co-supervisors: Filippo Piccinini, Anna Tesei, Rolando Polico. Thesis defence: 21st March 2013

Ilaria Fantigrossi, University of Bologna, Faculty of Biomedical Engineering, BS thesis, title: Analisi temporale di caratteristiche morfometriche estratte da immagini di broncosfere sottoposte a differenti trattamenti rediobiologici. Supervisor: Alessandro Bevilacqua. Co-supervisors: Filippo Piccinini, Anna Tesei, Rolando Polico. Thesis defence: 11th October 2012

Andrea Giorni, University of Bologna, Faculty of Biomedical Engineering, MS thesis, title: Misure di segnali fluorescenti per l'analisi in microscopia dell'espressione genica in biologia sintetica. 5 Supervisor: Emanuele Domenico Giordano. Co-supervisors: Alessandro Bevilacqua, Alessandro Gherardi, Filippo Piccinini, Francesca Ceroni. Thesis defence: 28th March 2012

Marco Marchetti, University of Bologna, Faculty of Biomedical Engineering, MS thesis, title: Segmentazione automatica di regioni in immagini istologiche. Supervisor: Alessandro Bevilacqua. Cosupervisors: Alessandro Gherardi, Filippo Piccinini, Wainer Zoli. Thesis defence: 28th March 2012

Davide Pollini, University of Bologna, Faculty of Biomedical Engineering, MS thesis, title: Ricostruzione di immagini di broncosfere in microscopia ottica con tecniche di estensione della profondità di fuoco. Supervisor: Alessandro Bevilacqua. Co-supervisors: Filippo Piccinini, Anna Tesei. Final score: 110 cum Laude. Thesis defence: 28th March 2012

Co-supervisor of thesis

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Alessandro Cedioli, University of Bologna, Faculty of Biomedical Engineering, BS thesis, title:
 Acquisizione di immagini di broncosfere in radiobiologia. Supervisor: Alessandro Bevilacqua. Cosupervisors: Filippo Piccinini, Anna Tesei. Thesis defence: 28th March 2012

Carlo Busa, University of Bologna, Faculty of Informatics Engineering, MS thesis, title: Automatic detection of cancerous regions in histopathological images. Supervisor: Riccardo Rovatti. Cosupervisors: Alessandro Bevilacqua, Sara Bravaccini, Filippo Piccinini. Final score: 110 cum Laude. Thesis defence: 19th December 2011

Software tools developed and freely available

For programming I typically use one of the following languages: MATLAB, C/C++, JAVA.

CellTracker, for tracking in 2D cells cultured *in vitro* http://celltracker.website

F-Tracker3D, for tracking in 3D fluorescent particles imaged with a confocal/light-sheet microscope http://sourceforge.net/p/f-tracker3d

Advanced Cell Classifier, for classifying cells in high-content screening images http://www.cellclassifier.org

CIDRE, for correcting the illumination field of microscopy images http://www.nature.com/nmeth/journal/v12/n5/full/nmeth.3323.html

MicroMos, for building a panorama, starting from a set of overlapping images http://www.filippopiccinini.it/Mosaicing/index.html

ReViMS, for cancer spheroids Reconstruction and Visualization using Multiple Sections http://sourceforge.net/projects/revims

ReViSP, for cancer spheroids Reconstruction and Visualization using a Single Projection http://sourceforge.net/projects/revisp

AnaSP, software suite to segment brightfield images of multicellular spheroids http://sourceforge.net/projects/anasp

3D-Cell-Annotator, MITK plugin for segmenting single cells in 3D datasets. www.3d-cell-annotator.org

DS4H Image Alignment, ImageJ/Fiji plugin for aligning images based on markers manually defined. www.filippopiccinini.it/DS4H-IA.html

English courses attended

Dates

Intensive personalized one-to-one English course in England.

June 9-15, 2013 (5 hours of lesson one-to-one a day per 5 days).

Organisation | English School: "Best In Bath". Accredited by the British Council. Bath, England.

English Course in Switzerland, Level C1 – Advanced User.

Dates | May 23, 2011 - July 11, 2011 (14 lessons of 2 hours each).

Organisation Klubschule Migros, Private Language Centre, Zurich, Switzerland. English Course in Italy, B2 – Independent User. September 27, 2010 - December 6, 2010. **Dates** Organisation CLIRO, University Language Centre, Cesena (FC), Italy. University exam, B2 – Independent User. Date March 20, 2007. Biomedical Engineering, University of Bologna, Cesena (FC), Italy. Organisation English Course in England, B2 – Independent User. June 30, 2002 - July 13, 2002. Dates Organisation EF Language Travel, London, England. English Course in England, A1 – Basic User. Dates July 26, 1999 - August 9, 1999.

Organisation | The British Council, London, England.

Oral presentation.

Conferences and courses

	4 th EACR Conference Goodbye Flat Biology.
Dates	November 10-13, 2019.
Location	Berlin, Germany.
Notes	Two works in form of poster.
	4 th Annual Meeting of the Italian Mesenchymal Stem Cell Group (GISM).
Dates	April 04-05, 2019.
Location	Genova, Italy.
Notes	Oral Communication, and one work in form of poster.
	Confocal Microscopy Course
Dates	January 2019 (one-week course after acquisition of the microscope from IRST)
Location	Istituto Scientifico Romagnolo per lo Studio e la Cura dei Tumori (IRST) IRCCS, Meldola (FC), Italy
Note	Organized by Nikon. Main teacher: Dr. Giacomo Cozzi.
	Intelligent Systems Conference 2018 (IntelliSys2018).
Dates	September 06-07, 2018.
Location	London, UK.
Note	Oral presentation.
	8 th International Digital Health Conference (DH'18).
Dates	April 23-26, 2018.
Location	Lyon, France.

 $\mathbf{3}^{\mathrm{rd}}$ Annual meeting of the Italian Mesenchymal Stem Cell Group (GISM).

Dates April 12-13, 2018. Location Assisi, Italy. Notes Two works in form of poster. FameLab 2017 intensive course for improving the public speaking of the 20 Italian finalists April 7-9, 2017. **Dates** Location POST (Perugia Workshop of Science and Technology), Perugia, Italy. 4th International Conference Translational Research in Oncology and 1st Multidisciplinary **Osteoncology School Dates** November 11-12, 2016. Location IRST- IRCCS, Meldola, Italy. 2nd Annual meeting of the Italian Mesenchymal Stem Cell Group (GISM). Dates October 20-21, 2016. Location Brescia, Italy. **Notes** Two works in form of poster. 3rd Italian School of Microscopy. **Dates** October 12-14, 2016. Location Orthopaedic Rizzoli Institute, Bologna, Italy Sponsored by Nikon. Main topic: super resolution. I was in the organization committee. Notes **Guest researcher to the Leica Microscopy Center Dates** September 18-19, 2016. Location Mannheim, Baden-Württemberg, Germany. Invited to test the Leica Light Sheet Microscope with our 3D cancer spheroids. **Notes** Guest researcher to the Carl ZEISS MICROSCOPY GmbH **Dates** March 3-4, 2016. Munich, Bavaria, Germany. Location **Notes** Invited to test the **Zeiss** Light Sheet Microscope with our 3D cancer spheroids. 1st Annual meeting of the Italian Mesenchymal Stem Cell Group (GISM). **Dates** October 8-9, 2015. Location Brescia, Italy. **Notes** Oral Communication, and three works in form of poster. XXXIV annual school of Bio-engineering. **Dates** September 21-24, 2015. Location Bressanone (BZ), Italy. 27th annual congress Italian Association Cell Culture (ONLUS-AICC) & 5th International Satellite Italian Mesenchymal Stem Cell Group (GISM). **Dates** November 12-14, 2014. Location Verona, Italy. Oral Communication, and three works in form of poster. Notes

4th IEEE International Conference on Image Processing Theory, Tools and Applications (IPTA 2014). Dates October 14-17, 2014. Location Paris, France. Notes **Oral Communication.** 4th Congress Gruppo Nazionale Bioingegneria (GNB 2014). June 25-27, 2014. **Dates** Location Pavia, Italy. Notes I presented one work in form of a poster. 1st Italian School of Microscopy. **Dates** March 5-7, 2014. Location Orthopaedic Rizzoli Institute, Bologna, Italy Notes Sponsored by Nikon. Main topic: live imaging. 26th annual congress Italian Association Cell Culture (ONLUS-AICC) & 4th International Satellite Italian Mesenchymal Stem Cell Group (GISM). **Dates** November 20-22, 2013. Location Brescia, Italy. I presented two works in form of a poster. Notes 1st International Conference MiMe-Materials in Medicine. **Dates** October 8-11, 2013. Location Faenza, Ravenna, Italy. **Financing** Grant financed by CNR and ISTEC-Faenza, Italy. Notes **Oral Communication** 8th World Conference on The Future of Science. Nanoscience Society, Fondazione Umberto Veronesi. Dates September 16-18, 2012. Location Venezia, Italy. **Financing** Granted by the University of Bologna, Italy. 33rd annual IEEE international conference Engineering in Medicine and Biology Society (EMBS 2011). Dates August 30, 2011 - September 3, 2011. Location Boston, Massachusetts, USA. Notes I presented two works in form of poster. IEEE SSCI Conference, symposium on Computational Intelligence in Bioinformatics and Computational Biology (CIBCB 2011). April 11-15, 2011. **Dates** Location Paris, France. Notes I presented two works in form of poster. CIMST 2010 Interdisciplinary Summer School on Bio-medical Imaging. Dates September 6-17, 2010.

Swiss Federal Institute of Technology Zurich (ETH), Zurich Center for Imaging Science and Technology Location (CIMST), Zurich, Switzerland.

Only 50 selected participants were admitted to attend the summer school. **Notes** I presented one work in form of a poster.

ICVSS 2010 International Computer Vision Summer School.

Dates July 12-17, 2010.

Location University of Catania, Scicli (Ragusa), Italy.

Notes I presented one work in form of a poster.

Other experiences

Exam for entrance in the Italian Register of Engineers

January 07, 2019 (date of the fourth and last test of the second call for 2018)

Organization University of Bologna

Dates

Note 1st test score: 40/60, 2nd test score: 57/60, 3nd test score: 57/60, 4th test score: 39/60. Accepted.

European Night of Researchers 2018.

Dates 28th September 2018, Forli

Main activity I organized a public show for children and adults about "microscopes and applications"

Organization http://nottedeiricercatori-society.eu/edizione2018/aspettando-la-notte-2018/

International FameLab talking science competition 2017.

24th March 2017 Date

Score Winner of the local selection (10 candidates)!

International competition with seminars with theatre directors, psychologists and famous public Main activity

speakers to learn how to speak in front of a public.

FameLab Italy (http://www.famelab-italy.it) Organization

European Night of Researchers 2015.

Dates 25th September 2015, Bologna

Main activity I organized a public show for children and adults about "microscopes and applications"

Organization https://eventi.unibo.it/notte-ricercatori-2015

International FameLab talking science competition 2015.

4th March 2015 seminars and 11th March 2015 pre-selection and local final. **Dates**

Score Selected as one of the 10 local finalists (36 candidates).

International competition with seminars with theatre directors, psychologists and famous public Main activity

speakers to learn how to speak in front of a public.

Organization FameLab Italy (website: http://famelabbo.bo.imm.cnr.it)

Biomedical Engineer Trainee.

Dates April 20, 2009 - May 22, 2009.

Development of techniques for image acquisition and processing; assessment of the quality of Main activity

several cell counters.

Organization Bone Regeneration Laboratory, Istituto Ortopedico Rizzoli, Bologna, Italy.

Supervisors Prof. Alessandro Bevilacqua and Dr. Enrico Lucarelli.

Electrician Trainee.

Dates

July 5, 2003 - July 19, 2003.

Main activity

Maintenance of electrical panels.

Organization | Alfing Kessler Sondermaschinen, Aalen, Germany.

Local show presenter and public event planner

Presenter Show "Faenza Rock Festival 2008", Faenza (RA), Italy

Presenter Show "Pisciniadi 2009: funny water games competition", Tontola (FC), Italy

Presenter Show "Pisciniadi 2008: funny water games competition", Tontola (FC), Italy

Presenter Show "Pisciniadi 2007: funny water games competition", Faenza (RA), Italy

Presenter Show "Pisciniadi 2006: funny water games competition", Faenza (RA), Italy

Event planner Summer season 2009, Disco-club Indie, Cervia (RA), Italy

Event planner Summer season 2008, Disco-club Panighina, Cesena, Italy

Event planner Winter season 2008, Disco-club Click-Rock, Forlì, Italy

Event planner Winter season 2007, Disco-club Click-Rock, Forlì, Italy

Event planner Winter season 2006, Disco-club Click-Rock, Forlì, Italy

Recommendations

- Prof. Alessandro Bevilacqua. Professor of Informatics, Bio-image processing, Image processing. Leader of the research group "Computer Vision Group (CVG)", University of Bologna. Supervisor of my PhD and my master thesis. Email: alessandro.bevilacqua@unibo.it. Phones: +390512095409
- Prof. Mauro Ursino. Programme Director of the First Degree and the Master Degree in Biomedical Engineering, University of Bologna. Professor of Neural Networks, University of Bologna. Co-Supervisor of my PhD and my master thesis. Email: mauro.ursino@unibo.it. Phones: +390512093073
- Prof. Peter Horvath. Professor of Image processing. Leader of the research group "Biological Image Analysis and Machine Learning Group (BIOMAG)", Biological Research Centre (BRC), Hungarian Academy of Sciences, Szeged, Hungary. Supervisor of my research activities during my stays in ETH Zurich and BRC Szeged. Email: horvath.peter@brc.mta.hu. Phone: +3662599654
- Prof. Kevin Smith. Professor of Image processing. KTH Royal Institute of Technology, School of Computer Science and Communication, Stockholm, Sweden. Co-supervisor of my research activities during my stays in ETH Zurich. Email: ksmith@kth.se. Phone: +46852481246
- Dr. Gábor Csúcs. Director of the Light Microscopy and Screening Center, ETH, Zurich, Switzerland. He provided me with a 7-month grant for the period spent in his Center, happily ended in a shared publication in Nature Methods. Email: csucs@lmc.biol.ethz.ch. Phone: +41446336221
- Dr. Enrico Lucarelli. Director of the Bone Regeneration Laboratory, Istituto Ortopedico Rizzoli, Bologna, Italy. Coordinator and Secretary of the Gruppo Italiano Staminali Mesenchimali (GISM). Referee of my trainee during the master thesis and co-supervisor of my master thesis. Email: enrico.lucarelli@ior.it. Phone: +390516366595
- Dr. Anna Tesei. Head of the Drug Discovery and Radiobiology Unit, Istituto Scientifico Romagnolo per lo Studio e la Cura dei Tumori (IRST), IRCCS, Meldola (FC), Italy. Collaborator for many shared projects. Email: anna.tesei@irst.emr.it. Phone: +390543739227.
- Prof. Emanuele Giordano. Professor of Biochemistry, Director of the Laboratory of Cellular and Molecular Engineering "S. Cavalcanti", Faculty of Biomedical Engineering, University of Bologna. Collaborator for many shared projects. Email: emanuele.giordano@unibo.it. Phone: +390547339251.
- Prof. Stefano Lazzari. Professor of Fluid Dynamics, Technical Physics, Computational Term Fluid Dynamics, University of Bologna. Supervisor of my bachelor thesis. Email: stefano.lazzari@unibo.it. Phone: +390512093383.

Personal skills and competences

Competences in Biology

Wide experience in planning and managing biological experiments on monolayer and threedimensional cell cultures. Practical abilities to conduct wetlab routine operations. I typically plan and lead personally the biological experiments of my research, assuming the responsibility of the outcome.

I'm an expert user of MATLAB and HTML. Regular user of FORTRAN, C/C++, JAVA, Python, R. Basis of PLC.

Computer skills and competences

I commonly use different CAD, simulation programs, advanced software and word processors: CIRCAD, COMSOL, LaTeX, GIMP, SketchUp, Adobe Illustrator.

I am an expert user of many microscope programs and imaging processing tools:

AxioVision (Zeiss), NIS-Elements (Nikon), MetaMorph (Molecular Devices), ImageXpress (Molecular Devices), CellProfiler, ImageJ.

I have good competence in web design. I have built 4 websites for:

Internet skills and competences

- Mesenchymal Stem cells Italian Group (www.gismonline.it)
- CellTracker official webpage (www.celltracker.website)
- Advanced Cell Classifier official webpage (www.cellclassifier.org)
- myself (www.filippopiccinini.it)

To design websites I strongly suggest Joomla!

Other skills and competences

Patent BLSD (Basic Life Support Defibrillation), obtained the 10/29/2018 after a two-day course and an exam organized by the Italian Red Cross association.

I'm an active member of the Associazione Volontari Italiani del Sangue (AVIS), the Italian society of donors of blood.

I was a football goalkeeper and I have many years of experience as a goalkeeper coach. I'm a latin salsa dancer and in my spare time I work as presenter of shows and local events. I love

public speaking!

Driving licences | B and A1 (experiences of left- and right-driving).

Additional information

www.filippopiccinini.it

I authorize the use and collection of my personal data according to the Art.13 of the Italian Legislative Decree n. 196/2003.

Bologna, 20-Nov-19

Filippo Ticcinini