

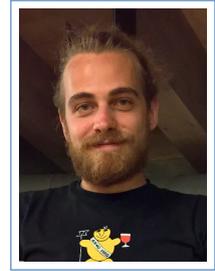
Federico Bolelli

Curriculum Vitae

✉ federico.bolelli@unimore.it

🌐 www.federicoblelli.it

📄 github.com/prittt



Last update on December 29th, 2020

Education

- 2016–2019 **Ph.D.**, *University of Modena and Reggio Emilia*, Modena, Italy.
Research topic: Optimization of Binary Image Processing Algorithms.
Supervisor: Prof. Costantino Grana.
- Dec. 2018 **Graduation to Professional Engineer in Computer Science (Italian Legislation)**, *University of Modena and Reggio Emilia*, Modena, Italy.
- 2014–2016 **Master Degree in Computer Engineering**, *University of Modena and Reggio Emilia*, Modena, Italy.
Mark: 110/110 cum laude.
Thesis title: A Benchmarking Tool for Connected Components Labeling.
Supervisors: Prof. Costantino Grana, Prof. Lorenzo Baraldi.
- 2011–2014 **Bachelor Degree in Computer Engineering**, *University of Modena and Reggio Emilia*, Modena, Italy.
Mark: 110/110 cum laude.
Thesis title: Progetto ed Implementazione di un Database per la Gestione di Metadati di Campioni/Esperimenti Genomici (Design and Implementation of a Database for Controlling Metadata of Genomic Sample/Experiments).
Supervisor: Prof. Domenico Beneventano.
- 2006–2011 **Scientific High School Diploma**, *Scientific Technological High School "F. Corni (I.T.I.S.)"*, Modena, Italy.
Mark: 100/100.

Vocational Experiences

- Nov. 2019–
On going **Postdoctoral Research Fellow at the "Enzo Ferrari" Department of Engineering**, *University of Modena and Reggio Emilia*, Modena, Italy.
"Development and testing of Image Processing and Computer Vision software libraries, DeepHealth - WP3 project": development of the ECVL (European Computer Vision Library) and its ecosystem within the [DeepHealth H2020 European Project](#).
- Dec. 2019–
Feb. 2020 **Contract Employment ("Collaborazione Occasionale")**, *University of Modena and Reggio Emilia*, Modena, Italy.
"INGEGNERIA.POT - School guidance and tutoring plans" project. Duration of the activity: 20 days.

- Mar. 2018 **Contract Employment (“Collaborazione Occasionale”)**, *University of Modena and Reggio Emilia*, Modena, Italy.
Code optimization for *Connected Components Labeling*. Duration of the activity: 15 days.
- Aug.–Oct. 2016 **Research Fellow**, *University of Modena and Reggio Emilia*, Modena, Italy.
“SACHER: Smart Architecture for Cultural Heritage in Emilia Romagna”: The project is designed with the intention of extending to a much wider audience of scholars, or even simply curious people, the possibility to access a variety of historical documents published [online](#). To that purpose, the project developed an innovative data capturing technique able to extract document indexes in quasi-automatic mode from their handwritten contents. The devised solution intervenes after the dematerialisation action of scanning the historic documents and obtaining one image per couple of adjacent pages, and it is intended to be especially applied to a long series of documents such as the large number of civil registries that are available since the constitution of the Italian state.
- Jan.–Jun. 2016 **Software Developer for “SUGAR-ME310” project**, *University of Modena and Reggio Emilia in Collaboration with Stanford University*.
Development of web applications and software for smart micro-controllers.

Teaching Activities

- Feb.– Sep. 2021 **Adjunct Professor for the Course of “Fundamentals of Computer Science II”**, *University of Modena and Reggio Emilia*, Modena, Italy.
Teaching activity (3 CFU) for the “Fundamentals of Computer Science II” course of Bachelor Degree in Computer Engineering.
- Feb.– Sep. 2021 **Adjunct Professor for the Course of “Multimedia Data Processing”**, *University of Modena and Reggio Emilia*, Modena, Italy.
Teaching activity (24 hours) for the “Multimedia Data Processing” course of Master Degree in Computer Engineering.
- Dec. 2020– Jan. 2021 **Lecturer for the Course “Tecniche per la Progettazione e lo Sviluppo di Applicazioni Informatiche: Industry 4.0 & Digital Transformation” (Techniques for the Design and Development of IT Applications: Industry 4.0 & Digital Transformation)**, *CFI*, Ferrara, Italy (Virtual).
Object-oriented programming lessons with Python (18 hours). The course has been funded by the Emilia Romagna Region and the European Social Fund.
- Nov.– Dec. 2020 **Lecturer for the Course “Tecnologie e Software per il Trattamento dei Big Data” (Technologies and Software for Big Data Processing)**, *IFOA*, Reggio Emilia, Italy (Virtual).
Object-oriented programming lessons with Python (22 hours). The course has been funded by the Emilia Romagna Region and the European Social Fund.
- Oct.– Nov. 2020 **Seminar lessons for the Short Master “Machine Learning - Theoretical and Practical Course”**, *University of Modena and Reggio Emilia*, Modena, Italy (Virtual).
Seminar lessons (8 hours) of *Computer Vision*. Course organized by Democenter foundation.
- Feb.– Sep. 2020 **Adjunct Professor for the Course of “Multimedia Data Processing”**, *University of Modena and Reggio Emilia*, Modena, Italy.
Teaching activity (24 hours) for the “Multimedia Data Processing” course of Master Degree in Computer Engineering.

- Jen.– Feb. 2020 **Teacher for the Introductory Course to Arduino Programming**, “*Dante Alighieri*” Middle School, Nonantola, Modena, Italy.
C programming lessons with Arduino (10 hours).
- Nov. 2019– Jan. 2020 **Lecturer for the Course “Tecniche per la Progettazione e lo Sviluppo di Applicazioni Informatiche: Industry 4.0 & Digital Transformation” (Techniques for the Design and Development of IT Applications: Industry 4.0 & Digital Transformation)**, CFI, Ferrara, Italy.
Object-oriented programming lessons with Python (18 hours). The course has been funded by the Emilia Romagna Region and the European Social Fund.
- Oct.–Dec. 2019 **Lecturer for the Course “Data Protection Officer & Analyst”**, IFOA, Reggio Emilia, Italy.
Object-oriented programming lessons with Python (32 hours). The course has been funded by the Emilia Romagna Region and the European Social Fund.
- Nov. 2019 **Lecturer for the Course “Anticipare la Crescita con le Nuove Competenze Sui Big Data - II Edizione” (Anticipating Growth with New Skills on Big Data - II Edition)**, Nuova Didactica, Modena, Italy.
Object-oriented programming lessons with Python (12 hours). The course has been funded by the Emilia Romagna Region and the European Social Fund.
- Oct. 2019 **Seminar lessons for the Short Master “Machine Learning - Theoretical and Practical Course”**, University of Modena and Reggio Emilia, Modena, Italy.
Seminar lessons (8 hours) of *Computer Vision*. Course organized by Democenter foundation.
- Apr.–May 2019 **Lecturer for the Course “Anticipare la Crescita con le Nuove Competenze Sui Big Data” (Anticipating Growth with New Skills on Big Data)**, Nuova Didactica, Modena, Italy.
Object-oriented programming lessons with Python (28 hours). The course has been funded by the Emilia Romagna Region and the European Social Fund.
- Feb.– Mar. 2019 **Lecturer for the Course “Anticipare la Crescita con le Nuove Competenze Sui Big Data” (Anticipating Growth with New Skills on Big Data)**, CIS, Reggio Emilia, Italy.
Object-oriented programming lessons with Python (32 hours). The course has been funded by the Emilia Romagna Region and the European Social Fund.
- Jan.–Feb. 2019 **Lecturer for the Course “Anticipare la Crescita con le Nuove Competenze Sui Big Data” (Anticipating Growth with New Skills on Big Data)**, IFOA, Reggio Emilia, Italy.
Object-oriented programming lessons with Python (24 hours). The course has been funded by the Emilia Romagna Region and the European Social Fund.
- Jan. 2019 **Lecturer for the Course “Tecniche per la Progettazione e lo Sviluppo di Applicazioni Informatiche: Industry 4.0 & Digital Transformation” (Techniques for the Design and Development of IT Applications: Industry 4.0 & Digital Transformation)**, CFI, Ferrara, Italy.
Object-oriented programming lessons with Python (8 hours). The course has been funded by the Emilia Romagna Region and the European Social Fund.
- Jen.– Mar. 2019 **Teacher for the Introductory Course to Arduino Programming**, “*Dante Alighieri*” Middle School, Nonantola, Modena, Italy.
C programming lessons with Arduino (18 hours).

- Oct. 2018 **Seminar lessons for the Short Master “Machine Learning - Theoretical and Practical Course”**, *University of Modena and Reggio Emilia*, Modena, Italy.
Seminar lessons (8 hours) of *Computer Vision*. Course organized by Democenter foundation.
- May 2018 **Lecturer for the Seminar about “Connected Components Labeling”**, *University of Modena and Reggio Emilia*, Modena, Italy.
Seminar lessons (4 hours) about “Connected Components Labeling” for the *Computer Vision* course of the Master Degree in Computer Engineering.
- 2017–On going **Honorary Fellow in “Fundamentals of Computer Science II”**, *University of Modena and Reggio Emilia*, Italy, Bachelor Degree in Computer Engineering.
- Sep.–Nov. 2017 **Seminar lessons for the University Master “Mumet: Digitalization and Retrieval Multimedia Data - Visual Computing and Multimedia Technologies in the Deep Learning Era”**, *University of Modena and Reggio Emilia*, Modena, Italy.
Seminar lessons (12 hours) of *Computer Vision*.
- 2016–On going **Honorary Fellow in “Fundamentals of Computer Science I”**, *University of Modena and Reggio Emilia*, Italy, Bachelor Degree in Computer Engineering.
- 2016–2019 **Honorary Fellow in “Multimedia Data Processing”**, *University of Modena and Reggio Emilia*, Italy, Master Degree in Computer Engineering.
- 2016–2020 **Graduate Teaching Assistant for the Course of “Fundamentals of Computer Science II”**, *University of Modena and Reggio Emilia*, Italy, Bachelor Degree in Computer Engineering.
Seminar lessons (540 hours) held for the “Fundamentals of Computer Science II” course of the Bachelor Degree in Computer Engineering as selected student of the project “Fondo Sostegno Giovani” (Youth Support Fund) for the the Academic Years 2016-2017, 2017-2018, 2018-2019 and 2019-2020. The project is funded by MIUR - “Ministero dell’Istruzione, dell’Università e della Ricerca” (Ministry of Education, University and Research).
- Oct.–Dec. 2016 **Undergraduate Teaching Assistant for the Course of “Computer Science”**, *University of Modena and Reggio Emilia*, Italy, Bachelor Degree in Civil Engineering.
Teaching support (80 hours) for the “Fundamentals of Computer Science” course of the Bachelor Degree in Civil and Environmental Engineering as selected student of the project “Fondo Sostegno Giovani” (Youth Support Fund) for the the Academic Year 2016-2017. The project is funded by MIUR - “Ministero dell’Istruzione, dell’Università e della Ricerca” (Ministry of Education, University and Research).

Thesis Supervision

- 2020 *Cristian Mercadante* (MSc) - Development of a Cone Beam Computed Tomography Annotation Tool for Automatic Detection of the Inferior Alveolar Nerve Canal through Deep Learning.
Maximilian Söchting (MSc, Erasmus+ from the Hasso Plattner Institute of Potsdam University) - Using Heuristics for Decision Tree Generation in Image Processing.
Ilaria Manghi (BSc) - Framework Django per la Progettazione di una Web Application per la Gestione di Tesi e Attività Progettuali (Django Framework for the Design of a Thesis and Project Activities Management Web Application)
Fabio Romagnolo (BSc) - Progetto, Implementazione, Configurazione e Manutenzione della Piattaforma Web Tirocini di Ingegneria Informatica (“Computer Engineering Internships” Web Application: Design, Implementation, Configuration and Maintenance)

- Sara Sarto* (BSc) - Sviluppo di un'Applicazione Web in Django per Gestire Domanda e Offerta di Tesi e di Attività Progettuali (Development of a Web Application in Django to Manage Demand and Supply of Theses and Project Activities).
- 2019 *Stefano Allegretti* (MSc, currently Ph.D. Student) - Optimization of Connected Components Labeling Algorithms on Binary Images for CPUs and GPUs.
- Andrea Polastri* (BSc) - RaspMostat: Termodensimetro Digitale per il Controllo Remoto del Processo di Fermentazione (RaspMostat: Digital Thermometer to Remotely Control the Fermentation Process).
- 2018 *Cristian Mercadante* (BSc) - Installazione e Configurazione di Sharelatex su Piattaforma Docker (Installation and configuration of Sharelatex on Docker Platform).
- 2017 *Federico Pollastri* (MSc, currently Ph.D. Student) - Impact of a Generative Adversarial Network synthetic dataset on fully convolutional-deconvolutional networks for automatic skin lesion segmentation training.
- Michele Cancilla* (MSc, currently Research Fellow) - Parallelization of Connected Components Labeling Algorithms.

Miscellaneous Experiences

- 2011–2019 **Private Teacher**, Modena, Italy.
Private teacher of Maths, Physics, Chemistry, and Computer Science for high school and university students
- 2016–On going **Beer Brewing and Beer Tasting (Sommelier) Teacher**, *Unionbirrai Cultural Association*, Modena, Italy.

Speaker Activities at National and International Conferences

- 2019 ICIAP - 20th International Conference on Image Analysis and Processing, Trento, Italy (Spotlight + Poster).
CAIP - 18th International Conference on Computer Analysis of Images and Patterns, Salerno, Italy (Oral).
- 2018 IPAS - Third IEEE International Conference on Image Processing, Applications and Systems, Sophia-Antipolis, France (Oral).
CBMS - 31st IEEE CBMS International Symposium on Computer-Based Medical Systems, Karlstad, Sweden (Poster).
IRC DL - 14th Italian Research Conference on Digital Libraries, Udine, Italy (Oral).
- 2017 IRC DL - 13th Italian Research Conference on Digital Libraries, Modena, Italy (Poster).
ICIAP - 19th International Conference on Image Analysis and Processing, Catania, Italy (Poster).

Invited Talks

- Nov. 2020 **Pipelines for Medical Imaging Use Cases & Requirements for Benchmarking**, *European Big Data Value Forum (EBDVF) - Session 2: A Project Perspective on Big Data and AI Architectural Pipelines and Benchmarks*, Berlin, Germany (Virtual).

Feb. 2020 **The DeepHealth European Project and the Research on Medical Imaging at AlmageLab**, *University of Modena and Reggio Emilia, "Enzo Ferrari" Department of Engineering, Modena, Italy.*

Refereeing Activities

2020 **Referee for the "Document and Media Analysis" track**, *25th International Conference on Pattern Recognition - ICPR, Milan, Italy.*

Participation in the Drafting of International Projects

2020 **H2020 - HIPPOCRATES: "Supporting Early Diagnosis and Treatment of Cancer by AI"**, *Under review for the call SC1-FA-DTS-2018-2020.*

The *HIPPOCRATES* project aims at supporting early detection, diagnosis and treatment of several types of cancer through the design and deployment of a full ecosystem for research, development, validation and exploitation of AI-based solutions.

2019 **H2020 - DEEPHEALTH: "Deep-Learning and HPC to Boost Biomedical Applications for Health"**, *Accepted and funded under the call ICT-11-2018-2019.*

The *DeepHealth* project will provide HPC computing power at the service of biomedical applications, and will apply Deep Learning (DL) techniques on large and complex biomedical datasets to support new and more efficient ways of diagnosis, monitoring and treatment of diseases. Among the other things, UNIMORE is responsible for the development of the European Computer Vision Library (ECVL), one of the core elements of the project.

Third Mission and Service Activities at the University

2020–On **OLJ - OnLine Judge.**

going Design, development and maintenance of an online automated judge for remote examinations. Developed during the global pandemic of COVID-19, the web application is currently employed by different subjects of Bachelor and Master Degree in Computer Engineering at the University of Modena and Reggio Emilia: "Fundamentals of Computer Science I", "Fundamentals of Computer Science II", "Fundamentals of Operating Systems", and "Multimedia Data Processing". Along with the automated judge, OLJ provides a chat mechanism to easily communicate with students and a virtual proctor to monitor and record user desktop, thus becoming a suitable and useful tool for remote examinations. Quiz exams are also supported.

2019–On **Missioni.**

going Design, development and maintenance of a *Django*-based web application for the semi-automatic travel reimbursement forms filling, thus saving personnel working time and reducing possible errors. The application is primarily addressed to "Enzo Ferrari" Department of Engineering staff, but can be easily extended to many other types of form modules.

2018–On **AlmageLab Server Cluster Maintenance.**

going Configuration and maintenance of the AlmageLab XCP-ng based server cluster, running virtual machines that host many web services of the "Enzo Ferrari" Department of Engineering: Tutorato, OLJ, Missioni, MyData, Sharelatex, etc.

2017 **Master Mumet Opening Ceremony.**

Organization of the opening ceremony for the second edition of Master "Mumet: Visual Computing and Multimedia Technologies in the Deep Learning Era".

Computer Skills

- Programming Languages C, C++, Python, MATLAB, Java, JavaScript, Visual Basic, CUDA.
- Libraries OpenCV, wxWidgets, Boost C++, ECVL, EDDLL.
- Libraries **OpenCV's** *connectedComponents* and *connectedComponentsWithStats* functions, Contributions changes available since version 3.2.0 and 3.4.0.
- ECVL** (European Computer Vision Library) as one of the main developers.

Languages

- Mothertongue Italian
- Other Languages English, B2

Grants and Awards

- 2020 (Within the Almagelab research group - UNIMORE) Hardware funded by UNIMORE (20,000.00 €) under FAR 2020 — “Fondo di Ateneo per la Ricerca” (University Fund for Research) —, call for equipment. Also thanks to the financial contribution of Prof. Giovanni Pellacani, Prof. Riccardo Magistroni, and Dr. Alexandre Anesi research teams, we will equip our lab with a new server system (162 TFLOPS) to train AI models for Medical Imaging.
- (Within the Almagelab research group - UNIMORE) Project funded (30,000.00 €) in the call "Alte Competenze per la Ricerca e il Trasferimento Tecnologico" (High Skills for Research and Technological Transfer): our research project "Automated detection of the Inferior Alveolar nerve Canal (IAC) in Cone Beam Computed Tomography (CBCT) using deep-learning techniques" has been selected for funding.
- 2019 Best paper award at the *18th International Conference on Computer Analysis of Images and Patterns, CAIP*.
- (Within the Almagelab research group - UNIMORE) Third place out of 64 research groups at the *2019 International ISIC Challenge on Skin Lesion Classification*. Online leaderboard: <https://challenge2019.isic-archive.com/leaderboard.html>.
- 2013–2016 Best (graduate) students award of University of Modena and Reggio Emilia for the academic years 2013/2014 and 2015/2016. Rankings available at <https://www.unimore.it/bandi/stulau-gradpremiostudio.html>.
- 2011–2015 Best (undergraduate) students award of University of Modena and Reggio Emilia for the academic years 2011/2012, 2012/2013, and 2014–2015. Rankings available at <https://www.unimore.it/bandi/stulau-gradpremiostudio.html>.

Journal Reviewing

- IEEE Access - The Multidisciplinary Open Access Journal
- IEEE Transaction on Image Processing
- Pattern Recognition Journal - Elsevier
- IET Computer Vision
- KES Journal

Publications

Total citations: 216; h-index: 10 (source: [Google Scholar](https://scholar.google.com/), as of December 29, 2020).

Journal Articles

- 2020 G. LIGABUE, F. POLLASTRI, F. FONTANA, M. LEONELLI, L. FURCI, S. GIOVANELLA, G. ALFANO, G. CAPPELLI, F. TESTA, F. BOLELLI, C. GRANA, and R. MAGISTRONI, Evaluation of the Classification Accuracy of the Kidney Biopsy Direct Immunofluorescence through Convolutional Neural Networks, *Clinical Journal of the American Society of Nephrology* **15** (2020), 1445–1454.
- 2019 F. BOLELLI, S. ALLEGRETTI, L. BARALDI, and C. GRANA, Spaghetti Labeling: Directed Acyclic Graphs for Block-Based Connected Components Labeling, *IEEE Transactions on Image Processing* **29** (2019), 1999–2012.
- S. ALLEGRETTI, F. BOLELLI, and C. GRANA, Optimized Block-Based Algorithms to Label Connected Components on GPUs, *IEEE Transactions on Parallel and Distributed Systems* **31** (2019), 423–438.
- F. POLLASTRI, F. BOLELLI, R. PAREDES, and C. GRANA, Augmenting Data with GANs to Segment Melanoma Skin Lesions, *Multimedia Tools and Applications* **79** (2019), 15575–15592.
- 2018 S. PINI, M. CORNIA, F. BOLELLI, L. BARALDI, and R. CUCCHIARA, M-VAD Names: a Dataset for Video Captioning with Naming, *Multimedia Tools and Applications Journal* **78** (2018), 14007—14027.
- F. BOLELLI, M. CANCELLA, L. BARALDI, and C. GRANA, Towards reliable experiments on the performance of Connected Components Labeling algorithms, *Journal of Real-Time Image Processing* **17** (2018), 229–244.

Conference Papers

- 2021 C. MERCADANTE, M. CIPRIANO, F. BOLELLI, F. POLLASTRI, M. DI BARTOLOMEO, A. ANESI, and C. GRANA, A Cone Beam Computed Tomography Annotation Tool for Automatic Detection of the Inferior Alveolar Nerve Canal, in *Proceedings of the 16th International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications* (Vienna, Austria), Feb 2021.
- M. SÖCHTING, S. ALLEGRETTI, F. BOLELLI, and C. GRANA, A Heuristic-Based Decision Tree for Connected Components Labeling of 3D Volumes, in *2020 25th International Conference on Pattern Recognition (ICPR)* (Milan, Italy), IEEE, Jan 2021.
- F. POLLASTRI, J. MAROÑAS, F. BOLELLI, G. LIGABUE, R. PAREDES, R. MAGISTRONI, and C. GRANA, Confidence Calibration for Deep Renal Biopsy Immunofluorescence Image Classification, in *2020 25th International Conference on Pattern Recognition (ICPR)* (Milan, Italy), IEEE, Jan 2021.

- M. CANCELLA, L. CANALINI, F. BOLELLI, S. ALLEGRETTI, S. CARRIÓN, R. PAREDES, J. A. GÓMEZ, S. LEO, M. E. PIRAS, L. PIREDDU, A. BADOUH, S. MARCO-SOLA, L. ALVAREZ, M. MORETO, and C. GRANA, The DeepHealth Toolkit: A Unified Framework to Boost Biomedical Applications, in *2020 25th International Conference on Pattern Recognition (ICPR)* (Milan, Italy), IEEE, Jan 2021.
- S. ALLEGRETTI, F. BOLELLI, F. POLLASTRI, S. LONGHITANO, G. PELLACANI, and C. GRANA, Supporting Skin Lesion Diagnosis with Content-Based Image Retrieval, in *2020 25th International Conference on Pattern Recognition (ICPR)* (Milan, Italy), IEEE, Jan 2021.
- 2020 S. ALLEGRETTI, F. BOLELLI, and C. GRANA, A Warp Speed Chain-Code Algorithm Based on Binary Decision Trees, in *4th International Conference on Imaging, Vision & Pattern Recognition* (Kitakyushu, Fukuoka, Japan), IEEE, Aug 2020.
- 2019 L. CANALINI, F. POLLASTRI, F. BOLELLI, M. CANCELLA, S. ALLEGRETTI, and C. GRANA, Skin Lesion Segmentation Ensemble with Diverse Training Strategies, in *Computer Analysis of Images and Patterns* (Salerno, Italy), **11678**, Springer, Sep 2019, pp. 89–101.
- S. ALLEGRETTI, F. BOLELLI, M. CANCELLA, F. POLLASTRI, L. CANALINI, and C. GRANA, How does Connected Components Labeling with Decision Trees perform on GPUs?, in *Computer Analysis of Images and Patterns* (Salerno, Italy), **11678**, Springer, Sep 2019, pp. 39–51.
- S. ALLEGRETTI, F. BOLELLI, M. CANCELLA, and C. GRANA, A Block-Based Union-Find Algorithm to Label Connected Components on GPUs, in *Image Analysis and Processing - ICIAP 2019* (Trento, Italy), **11752**, Springer, Sep 2019, pp. 271–281.
- F. BOLELLI and C. GRANA, Improving the Performance of Thinning Algorithms with Directed Rooted Acyclic Graphs, in *Image Analysis and Processing - ICIAP 2019* (Trento, Italy), **11752**, Springer, Sep 2019, pp. 148–158.
- 2018 S. ALLEGRETTI, F. BOLELLI, M. CANCELLA, and C. GRANA, Optimizing GPU-Based Connected Components Labeling Algorithms, in *2018 IEEE International Conference on Image Processing, Applications and Systems (IPAS)* (Inria Sophia Antipolis, France), IEEE, Dec 2018, pp. 175–180.
- F. BOLELLI, L. BARALDI, and C. GRANA, A Hierarchical Quasi-Recurrent approach to Video Captioning, in *2018 IEEE International Conference on Image Processing, Applications and Systems (IPAS)* (Inria Sophia Antipolis, France), IEEE, Dec 2018, pp. 162–167.
- F. BOLELLI, L. BARALDI, M. CANCELLA, and C. GRANA, Connected Components Labeling on DRAGs, in *2018 24th International Conference on Pattern Recognition (ICPR)* (Beijing, China), IEEE, Aug 2018, pp. 121–126.
- F. POLLASTRI, F. BOLELLI, R. PAREDES, and C. GRANA, Improving Skin Lesion Segmentation with Generative Adversarial Networks, in *2018 IEEE 31st International Symposium on Computer-Based Medical Systems (CBMS 2018)* (Karlstad, Sweden), IEEE, Jun 2018, pp. 442–443.

- F. BOLELLI, G. BORGHI, and C. GRANA, XDOCS: an Application to Index Historical Documents, in *Digital Libraries and Multimedia Archives* (Udine, Italy), **806**, Springer, Jan 2018, pp. 151–162.
- 2017 F. BOLELLI, M. CANCELLA, and C. GRANA, Two More Strategies to Speed Up Connected Components Labeling Algorithms, in *Image Analysis and Processing - ICIAP 2017* (Catania, Italy), **10485**, Springer, Sep 2017, pp. 48–58.
- F. BOLELLI, G. BORGHI, and C. GRANA, Historical Handwritten Text Images Word Spotting through Sliding Window HOG Features, in *Image Analysis and Processing - ICIAP 2017* (Catania, Italy), **10484**, Springer, Sep 2017, pp. 729–738.
- F. BOLELLI, Indexing of Historical Document Images: Ad Hoc Dewarping Technique for Handwritten Text, in *Digital Libraries and Archives* (Modena, Italy), **733**, Springer, Feb 2017.
- 2016 C. GRANA, F. BOLELLI, L. BARALDI, and R. VEZZANI, YACCLAB - Yet Another Connected Components Labeling Benchmark, in *2016 23rd International Conference on Pattern Recognition (ICPR)* (Cancun, Mexico), Springer, Dec 2016, pp. 3109–3114.
- C. GRANA, L. BARALDI, and F. BOLELLI, Optimized Connected Components Labeling with Pixel Prediction, in *Advanced Concepts for Intelligent Vision Systems* (Lecce, Italy), **10016**, Springer, Oct 2016, pp. 431–440.
- [Workshop Papers](#)
- 2021 F. BOLELLI, S. ALLEGRETTI, and C. GRANA, A Heuristic-Based Decision Tree for Connected Components Labeling of 3D Volumes: Implementation and Reproducibility Notes, in *Reproducible Research in Pattern Recognition* (Milan, Italy), Springer, Jan 2021.
- 2019 F. BOLELLI, M. CANCELLA, L. BARALDI, and C. GRANA, Connected Components Labeling on DRAGs: Implementation and Reproducibility Notes, in *Reproducible Research in Pattern Recognition* (Beijing, China), **11455**, Springer, May 2019, pp. 89–93.