

Simone Melzi *Ph.D.*

Contact:

- melzismn@gmail.com
- Office phone: +787878787
- [simone.melzi1 \(Skype\)](https://sites.google.com/site/melzismn)
- <https://sites.google.com/site/melzismn>
- Viale Sarca 336, Milan, Italy
- Room: Office 2017, second floor, Building U14, University of Milano-Bicocca

Personal details:

- Place of Birth: *Cernusco sul Naviglio (Milan), Italy*
- Citizenship: *Italian*
- Native Language: *Italian*
- Spoken Languages: *English*

Curriculum Vitae - updated: October 1, 2022.

Research Interests

- Geometry Processing, Spectral Shape Analysis, Graphics, Machine Learning, AI and Computer Vision.

Research Profile

I am an Assistant Professor (tenure track) at the University of Milano-Bicocca, in the Department of Informatics, Systems and Communication (DISCO). I was a Post Doctoral researcher at the Sapienza University of Rome in the GLADIA team led by Emanuele Rodolá for 21 months, at the École Polytechnique, in the team of Maks Ovsjanikov at the Laboratoire d'Informatique (LIX) in Paris (France) for six months and previously at the Università degli studi di Verona (Italy) from November 2017 to October 2019. I received my Ph.D. in Computer Science at Università degli studi di Verona (2018), and graduated in math at University of Milan "La Statale" (2013). I received The Marie-Curie Individual Fellowships and the Seal of Excellence for the H2020-MSCA-IF-EF-ST-2019 proposal NON-LINFMAPS, (score 92.20/100), and the EG-Italy PhD thesis award (2018).

I work on geometry processing, 3D shape analysis and artificial intelligence. I published around 40 papers on these topics in top-tier venues and journals in computer vision and graphics. I were involved in the program committee of several international and top-tier conferences for which I served as chair and reviewer. I maintain fruitful collaborations with many world leaders in this area both with academic institutions and companies.

Academic Appointments

- **University of Milano-Bicocca, Italy** – Computer Science department
Assistant Professor - tenure track. 1/02/2022 – present
 - **Sapienza University of Rome, Italy** – Computer Science department
Post Doctoral researcher - BE-FOR-ERC 2020 grant (9 months). 1/05/2021 – 31/01/2022
 - **Sapienza University of Rome, Italy** – Computer Science department
Post Doctoral researcher (12 months). 1/05/2020 – 30/04/2021
 - **École Polytechnique, Paris, France** – Laboratoire d'Informatique (LIX)
Post Doctoral researcher (6 months). 1/11/2019 – 30/04/2020
 - **Università degli studi di Verona, Italy** – Computer Science department
Post Doctoral researcher (24 months). 1/11/2017 – 31/10/2019
 - **Università degli studi di Verona, Italy** – Computer Science department
Research Fellow (3 months). 16/06/2014 – 15/09/2014
-

Education

- **Politecnico di Milano, DEIB, Italy** 05/02/2019 - 01/03/2019
Learning Sparse Representations for Image and Signal Modeling,
Doctoral School (Prof. Giacomo Boracchi).
- **Università degli studi di Verona, Italy** – Computer Science department 01/11/2014 - 19/06/2018
Ph.D in Computer Science.
Thesis: *Local Geometry Processing for Deformations of Non-Rigid 3D Shapes.*
Advisor: *Prof. Umberto Castellani (Università degli studi di Verona).*
Examiners: *Prof. Niloy Mitra (UCL), Prof. Marco Tarini (University of Milan "La Statale").*
Reviewers: *Prof. Niloy Mitra (UCL), Prof. Bruno Levy (INRIA, Nancy).*

- **English Course with Certificate**, Italy 01/10/2015 - 31/05/2016
Level B1 Upper Intermediate plus (Teacher Ilenia Ugge).
 - **Università Statale degli studi di Milano**, Italy 01/10/2015 - 14/02/2016
Optimization, Master degree Course (Prof. Lourenco Beirao da Veiga).
 - **Università degli studi di Verona**, Italy 03/03/2016 - 29/06/2016
Computer Vision, Master degree Course (Prof. Umberto Castellani).
 - **Università degli studi di Verona**, Italy 19/05/2015 - 21/05/2015
11th VIPS school: Partially Supervised Learning,
Doctoral School (Prof. Marco Loog).
 - **Università degli studi di Verona**, Italy 23/04/2015 - 04/05/2015
Digital Geometry Processing: Algorithms for Representing, Analyzing and Comparing 3D shapes,
Course (12 hours) (Prof. Maks Ovsjanikov).
 - **University of Milan "La Statale"**, Italy 12/10/2011 - 25/09/2013
Laurea Specialistica Degree (2 years degree, M.S. equivalent) in Math.
Grade: *110/110 cum laude*
 - **University of Milan "La Statale"**, Italy 01/08/2008 - 26/07/2011
Laurea Degree (3 years degree, B.S. equivalent) in Math.
Grade: *110/110 cum laude*
-

Professional Activities / Academic Service

- **Guest Editor** March 2022
Special Section VSI: STAG 2021 for the Computers Graphics Journals.
- **Member of the Program Committee** May 2022
The 21th International Conference on Image Analysis and Processing (ICIAP) 2021. *Lecce, Italy.*
- **Member of the Program Committee** June 2022
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2022. *New Orleans, United States.*
- **Member of the Program Committee** April 2022
Eurographics 2022, organized by the European Association for Computer Graphics. *Reims, France.*
- **Member of the Program Committee** December 2021
International Conference on 3D Vision (3DV) 2021. *Montreal, Canada.*
- **Event Chair** October 2021
STAG 2021, Smart Tools and Applications in Graphics, organized by the Italian Chapter of the Eurographics association. *Rome, Italy.*
- **Member of the Program Committee** October 2021
The International Conference on Computer Vision (ICCV) 2021. *Montreal, Canada.*
- **Member of the Program Committee** August 2021
The 30th International Joint Conference on Artificial Intelligence (IJCAI) 2021. *Montreal, Canada.*
- **Member of the Program Committee** September 2021
3D Object Retrieval (3DOR) 2021. *Cardiff University, UK.*
- **Member of the Program Committee** June 2021
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2021. *Nashville, United States.*
- **Member of the Program Committee** May 2021
Eurographics 2021, organized by the European Association for Computer Graphics. *Vienna, Austria.*
- **Member of the Matteo Dellepiane Thesis Award Committee** November 2020
STAG 2020, Smart Tools and Applications in Graphics, organized by the Italian Chapter of the Eurographics association.

- **Member of the Program Committee** November 2020
STAG 2020, Smart Tools and Applications in Graphics, organized by the Italian Chapter of the Eurographics association.
 - **Member of the Matteo Dellepiane Thesis Award Committee** November 2019
STAG 2019, Smart Tools and Applications in Graphics, organized by the Italian Chapter of the Eurographics association, *Cagliari, Italy*.
 - **Volunteers Chair** July 2019
SGP 2019, Symposium on Geometry Processing, *Milan, Italy*.
 - **Volunteers Chair** September 2018
3DV 2018, International Conference on 3D Vision, *Verona, Italy*.
 - **Trainee at ST Microelectronics** October 2013 – March 2014
Advanced System Technology, STMicroelectronics, *Via Olivetti2 Agrate, Monza-Brianza, Italy*.
 - **Reviewer**
 - EUROGRAPHICS 2019, 2020, 2021, 2022.
 - STAG 2020, 2021.
 - CVPR 2021, 2022.
 - 3DV 2018, 2021.
 - PACIFIC GRAPHICS 2020.
 - SIGGRAPH ASIA 2021.
 - ICCV 2021.
 - IJCAI 2021.
 - ECCV 2020.
 - BMVC 2018.
 - **Reviewer for International Journals**
 - IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)
 - International Journal of Computer Vision (IJCV)
 - Transactions on Visualization and Computer Graphics (TVCG).
 - Transactions on Graphics (TOG).
 - Computer Animation and Virtual Worlds (CAVW).
 - Pattern Recognition.
 - Elsevier Computers Graphics (CAG).
-

Awards

- **Premio Giovani Talenti dell'Università degli Studi di Milano-Bicocca.** 2022
Young research award under the patronage of Accademia Nazionale dei Lincei for researcher of the University of Milano-Bicocca, first place in math and computer science **5K €**.
- **NVIDIA ACADEMIC HARDWARE GRANT.** 2022
NVIDIA personal grant to support the work and help make the project a success as a principal investigator for the project: *Learned representations for implicit binary operations on real-world 2D-3D data*. 2 RTX A5000 24GB **~6K €**.
- **GALILEO 2022 to support scientific cooperation between Italian and French institutions.** 2021
As a member of the Italian team from Sapienza University of Rome for the project: *Multimodal Artificial Intelligence for 3D shape analysis, modeling and applications*. **7K €**, 24 months.
- **Sapienza Research Starting Grant 2021: Progetti per Avvio alla Ricerca - Tipo 2.** 2021
In the role of Principal Investigator for the project: *Artificial intelligence and Latent representation for 3D shapes exploration and analysis*. **2.4K €**, 12 months.
- **BE-FOR-ERC 2020 grant.** 2020
In the role of Principal Investigator as post Doctoral researcher at Sapienza University of Rome. **~50K €**, 12 months.
- **Marie Curie grant (H2020-MSCA-IF-2019).** 2020
In the role of Principal Investigator for the project: *NON-LINFMAPS Non-linearity to improve and analyze functional maps for geometric data*. **~95K €**, 12 months.

- **Sapienza Research Starting Grant 2020: Progetti per Avvio alla Ricerca - Tipo 2.** 2020
In the role of Principal Investigator for the project: *Functional tools from spectral geometry processing to medical imaging applications*. 2K €, 12 months.
 - **Outstanding Reviewers for CVPR 2022.** 2021
One of the 100 reviewers awarded with a gift certificate of \$ 100 USD for the IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR) 2022.
 - **ELLIS membership.** 2022
Member of the European Lab for Learning and Intelligent Systems.
 - **Outstanding Reviewers for 3DV 2021.** 2021
One of the 14 awarded among more than 270 reviewers for the International Conference on 3D Vision, 3DV 2021. IEEE Computer Society, 2021.
 - **Best student paper award at 3DV 2020.** 2020
For the paper: *Instant recovery of shape from spectrum via latent space connections*, presented at the International Conference on 3D Vision, 3DV 2020. IEEE Computer Society, 2020. One of 4 awarded paper, out of more than 270 submissions.
 - **MSCA Seal of Excellence.** 2019
Seal of Excellence for the H2020-MSCA-IF-EF-ST-2019 proposal NON-LINFMAPS, score 92.20.
 - **EG-Italy Best PhD thesis award.** 2018
The EG-Italy thesis award hosted by STAG 2018.
-

Teaching

- **Digital Design.** a.y. 2020/2021
Lecturer, M.Sc. in Computer Science, University of Verona, *Digital Design*. Teaching responsibility: 60 hours (6 CFU), Enrollment: 100.
-

Tutorials/Short Courses

- **Lecturer, Tutorial, International Conference on 3D Vision 2021 (3DV 2021)** Dec 2021
Spectral Geometry in Practice, Length: 4 hours, Attendance: (forthcoming) PhD students / researchers / industry practitioners.
 - **Lecturer and coordinator of PhD Course** September 2021
PhD Course on "Learning On 3D Geometries" for the academic year 2020-2021 at the "La Statale" Università degli Studi di Milano.
 - **Lecturer, Tutorial, EUROGRAPHICS, Vienna** May 2021
Inverse Computational Spectral Geometry, Length: 4 hours, Attendance: (forthcoming) PhD students / researchers / industry practitioners.
 - **Lecturer and coordinator of PhD Course** July 2020
PhD Course on "Spectral shape analysis for 3D matching" for the academic year 2019-2020 at the Università degli Studi di Verona.
 - **Lecturer for the SGP 2020 graduate school** July 2020
"The functional representation of 3D shapes and High-Frequencies" course for PhD students and other post-graduate students. Graduate School at Geometry Processing of the Symposium on Geometry Processing (SGP) 2020.
 - **Lectures: Introduction to Spectral Graph Theory: from Fourier to 3D Meshes** December 2018
Università degli studi di Verona, Verona, Italy.
 - **High School Remedial Course Teacher** June 2013 – July 2013
IIS Niccolò Machiavelli, Via Rivoltana, 93/B - 20096 Pioltello, Milan, Italy.
 - **University of Milan "La Statale", Italy – Math department** December 2012 – June 2013
University Tutor for Geometry Course.
-

International Collaborations and Research Visits

- **Politecnico di Milano (IT)** 2019 – present
Research visit (July - October 2019); collaborator *Prof. Giacomo Boracchi*.
 - **“La Statale” University of Milan (IT)** 2019 – present
Research visit (July 2019); collaborator *Prof. Marco Tarini*.
 - **“La Sapienza” University of Rome (IT)** 2018 – present
Research visit (August 2018, June and August 2019); collaborator *Prof. Emanuele Rodolá*.
 - **University College London (UK)** 2018 – 2019
Research visit (June 2018); collaborator *Prof. Niloy Mitra*.
 - **TUM, Technische Universität München (D)** 2017 – 2019
Research visit (July 2017); collaborator *Prof. Federico Tombari*.
 - **LIX, École Polytechnique (FR)** 2015 – present
Research visit (September 2017, September 2018, April 2019, September 2019); collaborator *Prof. Maks Ovsjanikov*.
 - **USI, University of Lugano (CH)** 2014 – 2019
Research visit (January, September 2015; August 2016; January, February, September 2017, September 2018); collaborator *Prof. Michael Bronstein*.
-

Invited Talks and Seminars

- ***High frequencies in functional representation of 3D shapes*** November 2019
Politecnico di Milano; hosted by *G. Boracchi*.
 - ***CMH: Coordinates Manifold Harmonics for Functional Remeshing*** June 2019
“La Sapienza” University of Rome; hosted by *E. Rodolá*.
 - ***Matching Humans with Different Connectivity*** May 2019
SHREC 2019 at Eurographics Workshop 3D Object Retrieval 2019 (3DOR2019). Genova (Italy).
 - ***CMH: Coordinates Manifold Harmonics for Functional Remeshing*** May 2019
SHREC 2019 at Eurographics Workshop 3D Object Retrieval 2019 (3DOR2019). Genova (Italy).
 - ***CMH: Coordinates Manifold Harmonics for Functional Remeshing*** April 2019
LIX, École Polytechnique; hosted by *M. Ovsjanikov*.
 - ***Local Spectral Geometry Processing for Deformations of Non-Rigid 3D Shapes*** October 2018
STAG 2018, Smart Tools and Apps for Graphics - Eurographics Italian Chapter Conference. Brescia (Italy).
 - ***Indicators Basis for Functional Shape Analysis*** October 2018
STAG 2018, Smart Tools and Apps for Graphics - Eurographics Italian Chapter Conference. Brescia (Italy).
 - ***Localized Manifold Harmonics for Spectral Shape Analysis*** April 2018
Eurographics 2018, Delft (Netherlands).
 - ***Localized Manifold Harmonics for Spectral Shape Analysis*** July 2017
TUM Informatik-Kolloquium; hosted by *Prof. D. Cremers*.
 - ***Local Spectral Geometry Processing for Deformations of Non-Rigid 3D Shapes, part 3/3*** June 2017
AST STMicroelectronics; hosted by *P. Fragneto*.
 - ***Shape Analysis with Anisotropic Windowed Fourier Transform*** October 2016
Fourth International Conference on 3D Vision, (3DV) 2016. Stanford, California (USA).
 - ***Features Selection via Eigenvector Centrality*** September 2016
NFMCP Workshops, PKDD/ECML 2016. Riva del Garda (Italy).
 - ***Local Spectral Geometry Processing for Deformations of Non-Rigid 3D Shapes, part 2/3*** June 2016
AST STMicroelectronics; hosted by *P. Fragneto*.
 - ***Local Spectral Geometry Processing for Deformations of Non-Rigid 3D Shapes, part 1/3*** June 2015
AST STMicroelectronics; hosted by *P. Fragneto*.
-

Participation in Research projects

- **SPECGEO - Spectral geometric methods in practice.** 2019 - present
Funding: ERC Starting Grant (Horizon2020).
Role: researcher (leading the work package WP1 - Theoretical foundations);
Coordinator: Prof. E. Rodolá ("La Sapienza" University of Rome).
- **EXPROTEA - Exploring Relations in Structured Data with Functional Maps.** 2018 - present
Funding: ERC Starting Grant (Horizon2020).
Role: researcher;
Coordinator: Prof. M. Ovsjanikov (École Polytechnique).

Supervising and mentoring activities

- **Marco Pegoraro, M. Sc. Thesis** 2021
Università degli studi di Verona, Computer Science department.
In the role of co-advisor for the thesis.
- **Giovanni Trappolini, Ph.D.** 2020-2021
Sapienza University of Rome, Computer Science department.
In the role of internal supervisor (not as formal advisor).
- **Andrea Santilli, Ph.D.** 2020-2021
Sapienza University of Rome, Computer Science department.
In the role of internal supervisor (not as formal advisor).
- **Emilian Postolache, Ph.D.** 2020-2021
Sapienza University of Rome, Computer Science department.
In the role of internal supervisor (not as formal advisor).
- **Luca Bianco, M. Sc. Thesis** 2020-2021
Politecnico di Milano, Dipartimento di Elettronica, Informazione e Bioingegneria (DEIB).
In the role of co-advisor for the thesis.
- **Michele Colombo, M. Sc. Thesis** 2020-2021
Politecnico di Milano, Dipartimento di Elettronica, Informazione e Bioingegneria (DEIB).
In the role of co-advisor for the thesis.
- **Antonio Norelli, Ph.D.** 2020-2021
Sapienza University of Rome, Computer Science department.
In the role of internal supervisor (not as formal advisor).
- **Marco Fumero, Ph.D.** 2020-2021
Sapienza University of Rome, Computer Science department.
In the role of internal supervisor (not as formal advisor).
- **Luca Moschella, Ph.D.** 2019-2020
Sapienza University of Rome, Computer Science department.
In the role of internal supervisor (not as formal advisor).
- **Filippo Maggioli, Ph.D.** 2019-2020
Sapienza University of Rome, Computer Science department.
In the role of internal supervisor (not as formal advisor).
- **Arianna Rampini, Ph.D.** 2019-2020
Sapienza University of Rome, Computer Science department.
In the role of internal supervisor (not as formal advisor).
- **Andrea Schillaci, Ph.D.** 2019
Politecnico di Milano, Dipartimento di Elettronica, Informazione e Bioingegneria (DEIB) and Dipartimento di Scienze e Tecnologie Aerospaziali (DAER).
In the role of external supervisor (not as formal advisor).

- **Marie-Julie Rakotosaona, Ph.D.** 2019-2020
Laboratoire d'Informatique (LIX), École Polytechnique, Paris (France).
In the role of internal supervisor (not as formal advisor).
- **Maxime Kirgo, Ph.D.** 2019-2020
Laboratoire d'Informatique (LIX), École Polytechnique, Paris (France).
In the role of internal supervisor (not as formal advisor).
- **Pietro Musoni, Ph.D.** 2019-2020
Università degli studi di Verona, Computer Science department.
In the role of external supervisor (not as formal advisor).
- **Riccardo Marin, Ph.D.** 2017-2020
Università degli studi di Verona, Computer Science department.
In the role of internal supervisor (not as formal advisor).
- **Edoardo Gazzaniga, M. Sc. Thesis** 2019
Politecnico di Milano, Dipartimento di Elettronica, Informazione e Bioingegneria (DEIB) and Dipartimento di Scienze e Tecnologie Aerospaziali (DAER).
In the role of co-advisor for the thesis.
- **Andrea Filippozzi, M. Sc. Thesis** 2019
Politecnico di Milano, Dipartimento di Elettronica, Informazione e Bioingegneria (DEIB).
In the role of co-advisor for the thesis.
- **Filippo Bardon, M. Sc. Thesis** 2018-2019
Università degli studi di Verona, Computer Science department.
In the role of co-advisor for the thesis.

Participation in industrial innovation

- **Functional matching approaches for analysis of medical 3D data.**
Role: Dr Roman Hossein Khonsari, Service de chirurgie maxillofaciale et plastique, Assistance Publique - Hôpitaux de Paris, Hôpital Universitaire Necker - Enfants Malades, Université Paris-Descartes, Paris (France). 15/11/2019 - present
- **Automatic extraction of anthropometric measurements from digital 3D scan of human bodies, (phase 2).**
Role: Researcher. Supported by: Igoodi S.r.l. 01/08/2019 - 31/01/2020
- **Automatic extraction of anthropometric measurements from digital 3D scan of human bodies, (phase 1).**
Role: Researcher. Supported by: Igoodi S.r.l. 27/11/2018 - 15/02/2019
- **Development of computer graphics tools for the interaction between humans and machines.**
Role: Researcher. Collaboration with Humatics S.r.l. (Italy). 13/06/2018 - present
- **Meetings and seminars for the development of tools for the internet of things and artificial intelligence.**
Role: Researcher. Collaboration with AST research Center, at STMicroelectronics. 01/04/2014 - present

Skills

Technical specialties: Software design and implementation, with(in) a team. Expert programming in MATLAB. Knowledge of Python/C++/C. Rendering tools as Blender and Povray.

Natural languages: Italian (*mother tongue*), English (*professional proficiency*), French (*elementary proficiency*).

List of Publications

Bibliometric indices

- *h*-index: 17 (Google Scholar), 13 (Scopus).
- *i10*-index: 24 (Google Scholar), 14 (Scopus).
- Number of citations: 3472 (Google Scholar), 1825 (Scopus).

Journals

1. Luca Moschella, **Simone Melzi**, Luca Cosmo, Filippo Maggioli, Or Litany, Maks Ovsjanikov, Leonidas Guibas, Emanuele Rodolà. *Spectral Unions of Partial Deformable 3D Shapes*. To be presented at EUROGRAPHICS 2022. Computer Graphics Forum (CGF), to be published, 2022.
2. Nicolas Donati, Etienne Corman, **Simone Melzi**, Maks Ovsjanikov. *Complex Functional Maps: a Conformal Link Between Tangent Bundles*. Computer Graphics Forum (CGF), to be published, 2022.
3. Pietro Musoni, Riccardo Marin, **Simone Melzi**, Umberto Castellani. *A Functional Skeleton Transfer*. Presented at the 20th Annual Symposium on Computer Animation, (SCA 2021). Proceedings of the ACM on Computer Graphics and Interactive Techniques, vol. 4,3; pages 1 – 15. Association for Computing Machinery, 2021.
4. Riccardo Marin, Arianna Rampini Umberto Castellani, Emanuele Rodolà, Maks Ovsjanikov, **Simone Melzi**. *Spectral shape recovery and analysis via data-driven connections*. International Journal of Computer Vision (IJCV), vol. 129; pages 2745 – 2760. Springer, 2021.
5. Jing Ren, **Simone Melzi**, Maks Ovsjanikov, Peter Wonka. *Discrete Optimization for Shape Matching*. Presented at SGP 2021. Computer Graphics Forum (CGF), vol. 40,5; pages 81 – 96. The Eurographics Association and John Wiley & Sons Ltd, 2021.
6. Filippo Maggioli, **Simone Melzi**, Maks Ovsjanikov, Michael Bronstein, Emanuele Rodolà. *Orthogonalized Fourier Polynomials for Signal Approximation and Transfer*. Presented at EUROGRAPHICS 2021. Computer Graphics Forum (CGF), vol. 40,2; pages 435 – 447. The Eurographics Association and John Wiley & Sons Ltd, 2021.
7. Maxime Kirgo, **Simone Melzi**, Giuseppe Patanè, Emanuele Rodolà, Maks Ovsjanikov. *Wavelet-based Heat Kernel Derivatives: Towards Informative Localized Shape Analysis*. Presented at EUROGRAPHICS 2021. Computer Graphics Forum (CGF), vol. 40,1; pages 165 – 179. The Eurographics Association and John Wiley & Sons Ltd, 2021.
8. Jing Ren, **Simone Melzi**, Maks Ovsjanikov, Peter Wonka. *MapTree: Recovering Multiple Solutions in the Space of Maps*. Presented at SIGGRAPH ASIA 2020. ACM Transaction on Graphics, vol. 39,6; pages 1 – 17. ACM, 2020.
9. Roberto Marco Dyke, Yu-Kun Lai, Paul L. Rosin, Stefano Zappalá, Seana L. Dykes, Daoliang Guo, Kun Li, Riccardo Marin, **Simone Melzi**, Jungyu Yan. *SHREC'20: Shape correspondence with non-isometric deformations*. Computer & Graphics, vol. 92; pages 28 – 43. Pergamon, 2020.
10. Giorgio Roffo, **Simone Melzi**, Umberto Castellani, Alessandro Vinciarelli and Marco Cristani. *Infinite Feature Selection: A Graph-based Feature Filtering Approach*. IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), vol. 43,12; pages 4396 – 4410. IEEE, 2020.
11. **Simone Melzi**, Riccardo Marin, Pietro Musoni, Filippo Bardon, Marco Tarini and Umberto Castellani. *Intrinsic/extrinsic embedding representation for functional remeshing of 3D shapes*. Computer & Graphics, vol. 88; pages 1 – 12. Pergamon, 2020.
12. **Simone Melzi**, Jing Ren, Emanuele Rodolà, Abhishek Sharma, Peter Wonka, Maks Ovsjanikov. *ZoomOut: Spectral Upsampling for Efficient Shape Correspondence*. Presented at SIGGRAPH ASIA 2019. ACM Transaction on Graphics, vol. 38,(6); pages 1 – 14. ACM, 2019.
13. **Simone Melzi**, Riccardo Marin, Emanuele Rodolà, Umberto Castellani. *FARM: Functional Automatic Registration Method for 3D Human Bodies*. Computer Graphics Forum (CGF), vol. 39,1; pages 160 – 173. The Eurographics Association and John Wiley & Sons Ltd, 2019.
14. **Simone Melzi**. *Sparse representation of step functions on manifolds*. Computer & Graphics, vol. 82; pages 117 – 128. Pergamon, 2019.
15. **Simone Melzi**, Dorian Nogneng, Emanuele Rodolà, Umberto Castellani, Micheal Bronstein, Maks Ovsjanikov. *Improved Functional Mappings via Product Preservation*. Computer Graphics Forum, vol. 37,2; pages 179 – 190. The Eurographics Association and John Wiley & Sons Ltd, 2018.
16. **Simone Melzi**, Maks Ovsjanikov, Giorgio Roffo, Marco Cristani, and Umberto Castellani. *Discrete time Evolution Process Descriptor for shape analysis and matching*. Presented at SIGGRAPH 2018. ACM Transaction on Graphics, vol. 37,1(4); pages 1 – 18. ACM, 2018.

17. **Simone Melzi**, Emanuele Rodola, Umberto Castellani, and Michael Bronstein. *Localized Manifold Harmonics for Spectral Shape Analysis*. Computer Graphics Forum, vol. 37,6 pages 20 – 34. The Eurographics Association and John Wiley & Sons Ltd, 2018.
18. Davide Boscaini, Jonathan Masci, **Simone Melzi**, Michael M Bronstein, Umberto Castellani, and Pierre Vanderghenst. *Learning class-specific descriptors for deformable shapes using localized spectral convolutional networks*. Computer Graphics Forum, vol. 34,5 pages 13 – 23. The Eurographics Association and John Wiley & Sons Ltd, 2015.

International Conferences

The top-tier conferences in Computer Vision and machine learning are CVPR, NIPS, ICML, ICCV and ECCV. Being very selective the proceedings of these should be considered as important as the top international journals in the Computer Vision community.

1. Giovanni Trappolini, Luca Cosmo, Luca Moschella, Riccardo Marin, **Simone Melzi**, Emanuele Rodolá. *Shape registration in the time of transformers*. Neural Information Processing Systems, NIPS 2021. Neural Information Processing Systems Foundation, 2021.
2. Marco Fumero, Luca Cosmo, **Simone Melzi**, Emanuele Rodolá. *Learning disentangled representations via product manifold projection*. Proc. International Conference on Machine Learning, (ICML 2021). Accepted (to be published).
3. Arianna Rampini, Franco Pestarini, Luca Cosmo, **Simone Melzi**, Emanuele Rodolá. *Universal Spectral Adversarial Attacks for Deformable Shapes*. IEEE Conference on Computer Vision and Pattern Recognition (CVPR 2021).
4. Gautam Pai, Jing Ren, **Simone Melzi**, Peter Wonka, Maks Ovsjanikov. *Fast Sinkhorn Filters: Using Matrix Scaling for Non-Rigid Shape Correspondence with Functional Maps*. IEEE Conference on Computer Vision and Pattern Recognition (CVPR 2021).
5. Riccardo Marin, Marie-Julie Rakotosaona, **Simone Melzi**, Maks Ovsjanikov. *Correspondence learning via linearly-invariant embedding*. Neural Information Processing Systems, NIPS 2020. Neural Information Processing Systems Foundation, 2020.
6. Riccardo Marin, Arianna Rampini Umberto Castellani, Emanuele Rodolá, Maks Ovsjanikov, **Simone Melzi**. *Instant recovery of shape from spectrum via latent space connections*. International Conference on 3D Vision, 3DV 2020. IEEE Computer Society, 2020.
7. Riccardo Marin, **Simone Melzi**, Emanuele Rodola, and Umberto Castellani. *High-Resolution Augmentation for Automatic Template-Based Matching of Human Models*. Seventh International Conference on 3D Vision, 3DV 2019. IEEE Computer Society, 2019.
8. **Simone Melzi**, Riccardo Spezialetti, Federico Tombari, Michael Bronstein, Luigi Di Stefano, and Emanuele Rodolá. *GFrames: Gradient-based local reference frame for 3D shape matching*. IEEE Conference on Computer Vision and Pattern Recognition (CVPR 2019).
9. Matteo Denitto, **Simone Melzi**, Manuele Bicego, Umberto Castellani, Alessandro Farinelli, Mario Figueiredo, Yanir Kleiman, Maks Ovsjanikov. *Region-based Correspondence Between 3D Shapes via Spatially Smooth Biclustering*. ICCV 2017, pages 4270 – 4279. IEEE Computer Society, 2017.
10. Giorgio Roffo, **Simone Melzi**, Umberto Castellani, Alessandro Vinciarelli. *Infinite Latent Feature Selection: A Probabilistic Latent Graph-Based Ranking Approach*. ICCV 2017, pages 1407 – 1415. IEEE Computer Society, 2017.
11. **Simone Melzi**, Emanuele Rodola, Umberto Castellani, and Michael Bronstein. *Shape Analysis with Anisotropic Windowed Fourier Transform*. Fourth International Conference on 3D Vision, 3DV 2016, pages 470 – 478. IEEE Computer Society, 2016.
12. Giorgio Roffo, **Simone Melzi**. *Online feature selection for visual tracking*. BMVC 2016, pages 1 – 12. BMVA Press, 2016.
13. Giorgio Roffo, **Simone Melzi**, and Marco Cristani. *Infinite Feature Selection*. ICCV 2015, pages 4202 – 4210. IEEE Computer Society, 2015.

Research monographs, chapters in collective volumes:

- **Simone Melzi** et al. *The Visual Object Tracking VOT2016 Challenge Results*. VOT2016 Workshops, ECCV 2016, vol. 9914, pages 777 – 823. Lecture Notes in Computer Science, 2016.
- Giorgio Roffo, **Simone Melzi**. *Ranking to learn: Feature ranking and selection via eigenvector centrality*. NFMCP Workshops, PKDD/ECML 2016. Lecture Notes in Computer Science, vol. 10312, pages 19 – 35. Springer, 2016.
- **Simone Melzi**, Alessandro Mella, Umberto Castellani et al. *Functional maps for brain classification on spectral domain*. SESAMI (Spectral and Shape Analysis in Medical Imaging) workshop at MICCAI 2016, pages 25 – 36. Lecture Notes in Computer Science, 2016.
- Manuele Bicego, Stefano Danese, **Simone Melzi**, and Umberto Castellani. *A bioinformatics approach to 3d shape matching*. In Computer Vision-ECCV 2014, NORDIA Workshops, pages 313 – 325. Springer, 2014.

Workshops and national conferences

- Pietro Musoni, Riccardo Marin, **Simone Melzi**, Umberto Castellani. *Reposing and Retargeting Unrigged Characters with Intrinsic-extrinsic Transfer*. STAG 2021, Smart Tools and Apps for Graphics - Eurographics Italian Chapter Conference, pages 21 – 30. The Eurographics Association, 2021.
 - Riccardo Marin, **Simone Melzi**, Niloy Mitra and Umberto Castellani. *POP: full Parametric modelling estimation for Occluded People*. Eurographics Workshop 3D Object Retrieval 2019 (3DOR2019).
 - **Simone Melzi**, Riccardo Marin, Pietro Musoni, Filippo Bardon, Marco Tarini and Umberto Castellani. *CMH: Coordinates Manifold Harmonics for Functional Remeshing*. Eurographics Workshop 3D Object Retrieval 2019 (3DOR2019).
 - **Simone Melzi**, Riccardo Marin, Emanuele Rodolá and Umberto Castellani et al.. *Matching Humans with Different Connectivity*. SHREC2019 at Eurographics Workshop 3D Object Retrieval 2019 (3DOR2019).
 - **Simone Melzi**. *Indicators Basis for Functional Shape Analysis*. STAG 2018, Smart Tools and Apps for Graphics - Eurographics Italian Chapter Conference, pages 75 – 85. The Eurographics Association, 2018.
 - Giorgio Roffo, **Simone Melzi**. *Features Selection via Eigenvector Centrality*. NFMCP Workshops, PKDD/ECML 2016.
-