

# Riccardo Marin, Ph.D.

---

## Contact:

- [marin@di.uniroma1.it](mailto:marin@di.uniroma1.it)
- +39 3475494769
- <https://riccardomarin.github.io/>
- Maria-von-Linden-Strasse 6, Tübingen, 72072
- Germany

## Personal details:

- Place of birth: *Verona, Italy*
- Date of birth: *24 September 1991*
- Citizenship: *Italian*
- Native Language: *Italian*
- Spoken Languages: *English*

Curriculum Vitae - updated: October 23, 2022

---

## Research Interests

- Geometry Processing, 3D Generative Models, Deep Learning, Spectral shape Analysis, Computer Graphics and Computer Vision.

## Research Profile

*I am a Post Doctoral researcher, awarded with a Humboldt Post-Doctoral Fellowship, at the University of Tübingen in the Real-Virtual Humans group led by Gerard Pons-Moll. Previously, I was a post-doc at Sapienza University of Rome in the GLADIA group led by Emanuele Rodolà, leading a work package of SPECGEO ERC project. I followed the University of Verona's Ph.D program in Computer Science, under the supervision of Umberto Castellani, collecting a Best PhD Thesis award by EG-Italy. I graduated in Computer Science and Engineering at University of Verona (2017). I work on Spectral Shape Analysis, Shape Matching Geometric Deep Learning, and Virtual Humans. My work appears in top level conferences and journals (NeurIPS, IJCV, CGF, 3DV), obtaining also a Best Student Paper Award (3DV 2020). I served as conference organizer (RCD Committee at Siggraph, Volunteer Chair at 3DV 2018 and STAG 2021), as reviewer for several journals and conferences (like PAMI, TCVG, CVPR, NeurIPS, ICLR, ICML, CVPR), obtaining five Outstanding Reviewer Awards. I am involved in many fruitful collaborations (École polytechnique (LIX), Max-Planck Institute (MPI), INRIA Strasbourg, Sapienza University of Rome, University College London (UCL), University of Milan, University of Verona), and in projects financed by Google and ERC.*

---

## Academic Appointments

- **University of Tübingen, Germany - Computer Science department** 01/07/2022 – present  
**Post Doctoral researcher with Humboldt Foundation Fellowship (12 months);**  
Advisor: Prof. Gerard Pons-Moll
  - **Sapienza University of Rome, Italy - Computer Science department** 01/12/2020 – 30/06/2022  
**Post Doctoral researcher;**  
Advisor: Prof. Emanuele Rodolà
  - **Sapienza University of Rome, Italy - Computer Science department** 04/2021 – 04/2023  
**Contract/Adjunct Professor**  
Algorithm Design Course (Exerciser and member of the Exam Committee)
  - **École polytechnique (FRA), France - Computer Science department** 09/2019 – 03/2020  
**Visiting Student;**  
Advisor: Prof. Maks Ovsjanikov
- 

## Education

- **University of Verona, Italy – Computer Science department** 1/10/2017 – 10/06/2021  
Ph.D in Computer Science **with the additional label of Doctor Europeus.**  
(with scholarship; concluded without extension requests)  
Thesis: *Merging, extending and learning representations for 3D shape matching.*  
Advisor: Umberto Castellani  
Examiners: Alex Bronstein (Technion), Tobias Schreck (Graz University), Stefanie Wuhrer (INRIA Grenoble)  
Reviewers: Alex Bronstein (Technion), Stefanie Wuhrer (INRIA Grenoble)  
**Awarded Best PhD Thesis in Computer Graphics by Italian Chapter of Eurographics (STAG)**
- **Polytechnic University of Milan, Italy – Computer Science department** 07/2020  
Attendance at Graduate School on Machine Learning for Non-Matrix Data

Tuebingen, October 23, 2022,



- **University of Milan, Italy** – Computer Science department 05/2019  
Attendance at Graduate School at Symposium on Geometry Processing 2019 (SGP).
- **University of Brescia, Italy** – Computer Science department 10/2018  
Attendance at International School on Graphics and Geometry Processing for Digital Manufacturing (EGIT) at Italian Chapter of Eurographics (STAG).
- **Stanford University, coursera.org** 08/2017 – 07/2018  
Deep Learning Specialization; held by *Prof. Andrew Ng*  
Certificate
- **Alberta University, coursera.org** 01/2021 – 04/2021  
Reinforcement Learning Specialization; held by *Prof. Marta White and Prof. Adam White*  
Certificate
- **University of Verona, Italy** 2013 – 2017  
Laurea Specialistica Degree (2 years degree, M.S. equivalent) in Computer Science and Engineering.  
Thesis: *Augmented Reality for training of pretend play in children with Autism Spectrum Disorder*.  
Grade: 103/110
- **University of Verona, Italy** 2010 – 2013  
Laurea Degree (3 years degree, B.S. equivalent) in Computer Science.  
Grade: 101/110

## Professional Activities / Academic Service

- **Member of Program Committee** 2022  
Symposium on 3D Object Retrieval, *Florence (Italy)*.
- **Volunteers Chair** 12/2021  
STAG 2021, Smart Tools and Applications in Graphics, *Roma, Italy*.
- **Member** 08/2021  
SIGGRAPH Research Career Development Committee, *Tokyo, Japan (remotely)*.
- **Mentor** 05/2021  
International Conference on Learning Representations (ICLR) 2021, *Virtual*.
- **Member of Program Committee** 2021  
Workshop on 3D Object Retrieval 2021, *Virtual*.
- **SHREC19 Challenge Track Organizer** 02/2019  
Eurographics 2019 Workshop on 3D Object Retrieval, *Genova, Italy*.  
Track: Correspondence in Humans with Different Connectivity.  
[Web site](#)
- **Volunteers Chair** 09/2018  
3DV 2018, International Conference on 3D Vision, *Verona, Italy*.
- **Volunteer**  
*ICCV 2017, Venice, Italy*.  
*Eurographics 2019, Venice, Italy*.
- **High School advanced-class in Computer Skills Teacher** 11/2012 – 05/2013  
ITCS Aldo Pasoli, *Via Girolamo dalla Corte, 15 - 37131 Verona, Italy*.
- **Computer literacy course Teacher** 11/2012 – 05/2013  
ITCS Aldo Pasoli, *Via Girolamo dalla Corte, 15 - 37131 Verona, Italy*.
- **Reviewer - Conferences**
  - BMVC 2018
  - 3DV 2019, 2020, 2021, 2022
  - GMDL 2019
  - NeurIPS 2020, 2021, 2022
  - ICLR 2021, 2022

- AAAI 2021
  - CVPR 2021, 2022
  - ICML 2021, 2022
  - 3DOR 2021, 2022
  - MVA 2021
  - ICCV 2021
  - Siggraph ASIA 2021
  - EuroGraphics 2022
  - WACV 2022
  - ECCV 2022
  - **Reviewer - Journals**
    - IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)
    - IEEE Transactions on Computer Visualization and Computer Graphics (TVCG)
    - International Journal of Industrial Ergonomics
    - Computer and Graphics Journal (C&G)
    - International Journal of Computer Vision (IJCV)
    - IEEE/CAA Journal of Automatica Sinica
    - Journal of Imaging
    - IEEE Transactions on Image Processing
- 

## Teaching

- **Tutorial on Inverse Computational Spectral Geometry** 23/05/2022  
*Lecturer and organizer; at ICIAP 2021.*  
 Length: 4 hours, Attendance: ~30, *Lecce, Italy.*
  - **Tutorial on Inverse Computational Spectral Geometry** 25/04/2022  
*Lecturer and organizer; at EuroGraphics 2022.*  
 Length: 4 hours, Attendance: ~180, *Reims, France.*
  - **Numerical methods for Computer Science** 02/2022 - 04/2023  
*Assistant Professor; Lecturer and Exerciser, M.Sc. in Computer Science, Sapienza University of Rome.*  
 Teaching responsibility: 20 hours, Enrollment: ~10 students, *Roma, Italy.*
  - **Algorithm Design** 02/2022 - 04/2023  
*Adjunct Professor; Exerciser and member of the Exam Committee, M.Sc. in Computer Science, Sapienza University of Rome.* Teaching responsibility: 24 hours, Enrollment: ~100 students, *Roma, Italy.*
  - **Course on Data Science for High-School** 01/02/2021 - 07/02/2021  
*Teacher and organizer; School-work learning programme with CD: 50/50 association at the High School Morgagni.*  
 Teaching responsibility: 40 hours, Attendance: 26, *Rome, Italy.*
  - **Tutorial on Spectral Geometry in Practice** 30/11/2021  
*Lecturer and organizer; at the International Conference on 3D Vision 2021.*  
 Length: 4 hours, Attendance: ~250, *London, United Kingdom.*
  - **Algorithm Design** 04/2021 - 04/2022  
*Adjunct Professor; Exerciser and member of the Exam Committee, M.Sc. in Computer Science, Sapienza University of Rome.* Teaching responsibility: 24 hours, Enrollment: ~100 students, *Roma, Italy.*
  - **Spectral Shape Analysis for 3D matching** 06/2020  
*Lecturer and Organizer, Ph.D. School in Computer Science, University of Verona, Algorithm Design.* Teaching responsibility: 6 hours, Enrollment: ~20 students, *Verona, Italy.*
  - **Pattern Recognition** 03/2019 – 06/2019  
*Tutor student, Master degree in Computer Science and Computer Engineering, University of Verona. Verona, Italy.*
  - **Image Processing II** 11/2018 – 02/2019  
*Tutor student, Master degree in Computer Science and Computer Engineering, University of Verona. Verona, Italy.*
  - **Introduction to Programming** 03/2018 – 06/2018  
*Tutor student, Bachelor degree in Bioinformatics, University of Verona. Verona, Italy.*
-

## Honors and Awards

- **Matteo Dellepiane Award for Best PhD Thesis in Computer Graphics** 2022  
at the Italian Chapter of EuroGraphics (EG-Italy)
- **Outstanding Reviewer Award** 2022  
at The Conference on Neural Information Processing Systems (NeurIPS 2022)
- **Outstanding Reviewer Award** 2022  
at The IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR 2022)
- **Top Cited Article 2020-2021 Award** 2022  
Computer Graphics Forum Journal  
Paper title: *FARM: Functional Automatic Registration Method for 3D Human Bodies*
- **Outstanding Reviewer Award** 2021  
at the International Conference on 3D Vision (3DV 2021)
- **Outstanding Reviewer Award** 2021  
at the International Conference on Learning Representations (ICLR 2021)
- **Best Student Paper Award** 2020  
at the International Conference on 3D Vision (3DV 2020).  
Paper title: *Instant recovery of shape from spectrum via latent space connections*
- **Outstanding Reviewer Award** 2020  
at the International Conference on 3D Vision (3DV 2020)
- **Best Poster in Computer Science** 2018  
at the University of Verona's PhD Day Event  
Poster title: *FARM: Functional Automatic Registration Method for 3D Human Bodies*

---

## Funding and Grants

- **"Functional shape matching for implicit representations"** 06/2022 - 06/2023  
Funding: Alexander von Humboldt Foundation (~36K€)  
Role: **Principal Investigator**; Host: Prof. G. Pons-Moll
- **"Incremental Parallel Inference for Machine Translation"** 2022  
Funding: Imminent Research Grant (Translated) (20K€)  
Role: **Co-PI**
- **Funds for international mobility - long periods** 09/2019 - 03/2020  
Funding: University of Verona (3.5K€)
- **MIUR Scholarship** for pursuing a PhD in Computer Science at University of Verona. 2017  
Funding: ~45k €, 3 years

---

## International Research Visits

- **University of Tübingen (DE)** 05/2022  
Research visit (~3 days); collaborator *Prof. Gerard Pons-Moll*.
- **École polytechnique (FRA)** 09/2019 - 03/2020  
Research visit (~6 months); collaborator *Prof. Maks Ovsjanikov*.
- **University College London (UK)** 06/2018  
Research visit (~1 week); collaborator *Prof. Niloy Mitra*.

---

## Invited Talks and Seminars

- **Data-driven spectral analysis for practical geometry processing** 05/05/2022  
Pi School of AI, Rome
- **Data-driven spectral analysis for practical geometry processing** 03/05/2022  
Tubingen University; hosted by *Prof. G. Pons-Moll*.
- **Data-driven spectral analysis for practical geometry processing** 31/03/2022  
Universitat Pompeu Fabra (UPF); hosted by *Prof. C. Ballester*.

- *Digital Humans: minds and bodies* 11/02/2022  
The Sapienza School for Advanced Studies; hosted by Prof. E. Rodolà.
- *When the sun goes down: a story on telling stories* 12/11/2021  
DiDo Workshop, Sapienza University of Rome
- *Functional Matching* 11/11/2021  
DiDo Workshop, Sapienza University of Rome
- *Digital Humans* 19/04/2021  
OpenDI, Sapienza University of Rome
- *Functional Maps and Non-Rigid Registration: A crash course* 02/03/2021  
Inria Strasbourg; hosted by Prof. S. Cotin.
- *Digital Humans: minds and bodies* 02/03/2021  
The Sapienza School for Advanced Studies; hosted by Prof. E. Rodolà.
- *Correspondence Learning via Linearly-invariant Embedding* 20/11/2020  
Sapienza University of Rome; hosted by Prof. E. Rodolà.
- *Functional template based matching for human bodies.* 04/03/2020  
École polytechnique; hosted by Prof. P. Memari.
- *Introduction to Spectral Graph Theory: from Fourier to 3D models.* 18,19,20/12/2018  
University of Verona; hosted by Prof. G. Menegaz.
- *Instant recovery of shape from spectrum via latent space connections* 25/11/2020  
International Conference on 3D Vision (3DV), 2020
- *FARM: Functional Automatic Registration Method for 3D Human Bodies.* 29/05/2019  
Eurographics (EG), 2020
- *POP: full Parametric modelling estimation for Occluded People.* 05/05/2019  
The 12th Eurographics Workshop on 3D Object Retrieval (3DOR), 2019

## Participation in Research projects

- *Fair Geometry: Toward Algorithmic Debiasing in Geometric Deep Learning.* 2021 - present  
Role: Researcher.  
Funding: Google Research  
Coordinator: Prof. E. Rodolà ("La Sapienza" University of Rome).
- *SPECGEO - Spectral geometric methods in practice.* 2020 - present  
Role: Researcher (leading the work package WP4 - Deep learning applications);  
Funding: ERC Starting Grant (Horizon2020).  
Coordinator: Prof. E. Rodolà ("La Sapienza" University of Rome).
- *EXPROTEA - Exploring Relations in Structured Data with Functional Maps.* 2019 - present  
Role: Researcher;  
Funding: ERC Starting Grant (Horizon2020).  
Coordinator: Prof. M. Ovsjanikov (École Polytechnique).

## Supervising and mentoring activities

- *Graduate Student (official co-advisor)*
  - Nikita Larichev, 2022, (Siegen, Thesis)
  - Luis Mautone, 2022, (Rome, Thesis)
  - Valentino Maiorca, 2021 (Rome, Thesis)
  - Silvio Severino, 2021 (Rome, Thesis)
  - Marco Pegoraro, 2021 (Verona, Thesis) - **Awarded Best Thesis at the Italian Chapter of Eurographics**
  - Filippo Bardon, 2019 (Verona, Thesis)

## Participation in industrial innovation

- *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
  - *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
- 

## Other

- *CD: 50/50, No-profit association for promoting gender equality and diversity in STEM*  
Role: Co-founder and lecturer.  
[Website](#) 09/2021 - present
- 

## Media Coverage

- *Italian ministry of digital innovation lists CD:50/50 among associations addressing the digital divide in the Italian population*  
[Website](#) 2021
  - *The magazine of University of Verona reports Marco Pegoraro's Best Italian Master Thesis in Computer Graphics Award for our work on inverse spectral geometry*  
[Website](#) 2021
- 

## Skills

**Technical specialties:** Software design and implementation, with(in) a team. Expert programming in MATLAB, Python and use of libraries for Deep Learning and Data Science as PyTorch, PyTorch Lightning, Tensorflow (1 and 2), Keras, Pandas, Scipy and Scikit-learn. Good programming in C/C++. Knowledge of graphic tools as Blender, Povray, ZBrush, Unity.

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

---

## List of Publications

- Ramana Subramanyam Sundararaman, **Riccardo Marin**, Emanuele Rodolà, Maks Ovsjanikov. Reduced Representation of Deformation Fields for Effective Non-rigid Shape Matching, to appear Conference on Neural Information Processing Systems (NeurIPS), 2022.
- Filippo Maggioli, **Riccardo Marin**, Simone Melzi, Emanuele Rodolà. MoMaS: Mold Manifold Simulation for real-time procedural texturing, Pacific Graphic (PG), 2022.
- Marco Pegoraro, Simone Melzi, Umberto Castellani, Emanuele Rodolà, **Riccardo Marin**. Localized Shape Modelling with Global Coherence: An Inverse Spectral Approach, Symposium on Geometry Processing (SGP), 2022.
- Giovanni Trappolini, Luca Cosmo, Luca Moschella, **Riccardo Marin**, Simone Melzi, Emanuele Rodolà. Shape registration in the time of transformers, Conference on Neural Information Processing Systems (NeurIPS), 2021.
- Pietro Musoni, **Riccardo Marin**, Simone Melzi, A Functional Skeleton Transfer. ACM in Computer Graphics and Interactive Techniques (PACMCGIT), 2021, Presented by Pietro Musoni at the Symposium of Computer Animation (SCA2021).
- **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, 2021
- Eleonora Tagliabue, Marco Piccinelli, Diego Dall'Alba, Juan Verde, Micha Pfeiffer, **Riccardo Marin**, Stefanie Speidel, Paolo Fiorini, Stéphane Cotin. Intra-operative Update of Boundary Conditions for Patient-specific Surgical Simulation, MICCAI, 2021

- Letizia Squarcina, Guido Nosari, **Riccardo Marin**, Umberto Castellani, Marcella Bellani, Carolina Bonivento, Franco Fabbro, Massimo Molteni, Paolo Brambilla. *Automatic classification of autism spectrum disorder in children using cortical thickness and support vector machine*. Brain and Behavior, 2021
- Eleonora Tagliabue, Diego Dall'Alba, Micha Pfeiffer, Marco Piccinelli, **Riccardo Marin**, Umberto Castellani, Stefanie Speidel, Paolo Fiorini. *Data-driven Intra-operative Estimation of Anatomical Attachments for Autonomous Tissue Dissection*. IEEE Robotics and Automation Letters (RA-L), 2021
- **Riccardo Marin**, Marie-Julie Rakotosaona, Simone Melzi, Maks Ovsjanikov. *Correspondence Learning via Linearly-invariant Embedding*. Conference on Neural Information Processing Systems (NeurIPS), 2020. Presented by me.
- Roberto M. Dyke, Yu-Kun Lai, Paul L. Rosin, Stefano Zappalà, Seana Dykes, Daoliang Guo, Kun Li, **Riccardo Marin**, Simone Melzi, Jingyu Yang. *SHREC'20: Shape correspondence with non-isometric deformations*. Computer & Graphics, 2020.
- Roberto M. Dyke, Feng Zhou, Yu-Kun. Lai, Paul L. Rosin, Daoliang Guo, Kun Li, **Riccardo Marin**, Jingyu Yang. *SHREC'20: Non-rigid Shape Correspondence of Physically-Based Deformations*. 13th Workshop on 3D Object Retrieval (3DOR), 2020.
- **Riccardo Marin**, Arianna Rampini, Umberto Castellani, Emanuele Rodolà, Maks Ovsjanikov, Simone Melzi. *Instant recovery of shape from spectrum via latent space connections*. International Conference on 3D Vision (3DV), 2020. Presented by me. **[Best Student Paper Award]**
- Simone Melzi, **Riccardo Marin**, Pietro Musoni, Filippo Bardon, Marco Tarini, Umberto Castellani. *Intrinsic/extrinsic embedding representation for functional remeshing of 3D shapes*. Computer & Graphics, 2020.
- **Riccardo Marin**, Simone Melzi, Emanuele Rodolà, Umberto Castellani. *High-Resolution Augmentation for Automatic Template-Based Matching of Human Models*. International Conference on 3D Vision (3DV), 2019.
- **Riccardo Marin**, Simone Melzi, Emanuele Rodolà, Umberto Castellani. *FARM: Functional Automatic Registration Method for 3D Human Bodies*. Computer Graphics Forum (CGF), 2019. Presented by me at Eurographics (EG), 2020. **[Top Cited Article in CGF 2020-2021 Award]**
- **Riccardo Marin**, Simone Melzi, Niloy Mitra, Umberto Castellani. *POP: full Parametric modelling estimation for Occluded People*. The 12th Eurographics Workshop on 3D Object Retrieval (3DOR), 2019. Presented by me.
- **Riccardo Marin**, Simone Melzi, Pietro Musoni, Filippo Bardon, Marco Tarini, Umberto Castellani. *CMH: Coordinates Manifold Harmonics for Functional Remeshing*. The 12th Eurographics Workshop on 3D Object Retrieval (3DOR), 2019. Presented by Simone Melzi.
- Simone Melzi, **Riccardo Marin**, Pietro Musoni, Umberto Castellani, Marco Tarini. *Visual Assessments of Functional Maps*. Poster at Symposium on Geometry Processing (SGP), 2019. Presented by me.
- Simone Melzi, **Riccardo Marin**, Emanuele Rodolà, Umberto Castellani, Jing Ren, Adrien Poulenard, Peter Wonka, Maks Ovsjanikov. *SHREC'19: Matching Humans with Different Connectivity*, the 12th Eurographics Workshop on 3D Object Retrieval (3DOR), 2019. Presented by me.