

ALLEGATO A

UNIVERSITÀ DEGLI STUDI DI MILANO

Procedura di selezione per la chiamata a professore di I fascia da ricoprire ai sensi dell'art. 18, comma 1, della Legge n. 240/2010 per il settore concorsuale 01/B1 - INFORMATICA ,
(settore scientifico-disciplinare INF/01 - INFORMATICA)

presso il Dipartimento di [Dipartimento di Informatica Giovanni Degli Antoni](#),

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Nico Pietroni

CURRICULUM VITAE

INFORMAZIONI PERSONALI

COGNOME	PIETRONI
NOME	NICO
DATA DI NASCITA	20/10/1978

TITOLI

TITOLO DI STUDIO

2004 Master Degree in Computer Science, Dipartimento di informatica,
University of Pisa Score: 110 / 110
Title: *Algorithms and data structure for modelling cuts on deformable objects*
supervisor: Fabio Ganovelli, Paolo Cignoni

TITOLO DI DOTTORE DI RICERCA O EQUIVALENTI, OVVERO, PER I SETTORI INTERESSATI, DEL DIPLOMA DI SPECIALIZZAZIONE MEDICA O EQUIVALENTE, CONSEGUITO IN ITALIA O ALL'ESTERO

2009 PhD, Computer Science, University of Genova
title: *A robust approach to interactive virtual cutting: geometry and color*
supervisors: Enrico Puppo and Fabio Ganovelli

ALTRI TITOLI CONSEGUITI

Positions
<ul style="list-style-type: none">2023-present Associate Professor UTS Sydney, Australia2020-present Tenured Senior Lecturer (equivalent to Associate Professor in EU) UTS Sydney, Australia2017-2020 Senior Lecturer (equivalent to Associate Professor in EU) UTS Sydney, Australia2013-2017 Researcher (Permanent) Visual Computing Laboratory, (CNR), Italy2010-2013 Researcher (Temporary) Visual Computing Laboratory, (CNR), Italy2009-2011 Post Doc at Media Research Laboratory, New York University New York City, NY, USA2006 -2007 Visiting PhD Student at Computer Graphics Lab, ETH Zurich, Switzerland2004-2009 PhD Student, University of Genova, Italy
Italian Habilitation
<ul style="list-style-type: none">Full professor, Information Elaboration System (09/H1), Italian law n. 240/2010, art. 16,Full professor, Computer Science (01/B1), Italian law n. 240/2010, art. 16,Associate professor, Information Elaboration System (09/H1), Italian law n. 240/2010, art. 16Associate professor, Computer Science (01/B1), Italian law n. 240/2010, art. 16

ATTIVITÀ DIDATTICA

INSEGNAMENTI E MODULI

University of Technology Sydney, Australia

- Feb -June 2024 Introduction to Computer Graphics ~120 students (~54 hours)
- Feb -June 2024 Computer Animation ~100 students (~48 hours)

- Feb -June 2023 Introduction to Computer Graphics ~100 students (~54 hours)
- Feb -June 2023 Computer Animation ~100 students (~48 hours)
- Feb -June 2022 Introduction to Computer Graphics ~100 students (~54 hours)
- Feb -June 2022 Computer Animation ~100 students (~48 hours)
- Feb -June 2021 Introduction to Computer Graphics ~100 students (~54 hours)
- Feb -June 2021 Computer Animation ~100 students (~48 hours)
- Feb -June 2020 Introduction to Computer Graphics ~100 students (~54 hours)
- Feb -June 2020 Computer Animation ~100 students (~48 hours)
- Feb -June 2019 Introduction to Computer Graphics ~100 students (~54 hours)
- Feb -June 2019 Computer Animation ~60 students (~48 hours)
- Aug -Oct 2018 Interactive Media ~250 students (~48 hours)
- March -June 2018 Computing Science Studio ~30 students (~24 hours)
- March -June 2018 Software Development Studio ~30 students (~24 hours)
- March -June 2019 Introduction to Computer Graphics ~100 students (~54 hours)

ATTIVITÀ DI DIDATTICA INTEGRATIVA E DI SERVIZIO AGLI STUDENTI

Supervised PhD

- 2024 - ongoing Edward Su, UTS Sydney, *Geometry Processing*
- 2024 - ongoing Sultan Aljabri Liu, UTS Sydney, *Architectural Geometry*
- 2023 - ongoing Youanpeng Liu, RMIT Melbourne, *Architectural Geometry*
- 2023 - ongoing Stella Yanng Liu, UTS Sydney, *Digital Fashion Design*
- 2019 - ongoing Louis Pratt, FEIT, UTS Sydney, *Geometry Processing and Art*
- 2019 - ongoing Hassan Bahrami, FEIT, UTS Sydney, *3D printing*
- 2019 - ongoing Ivan Fan, FEIT, UTS Sydney, *Physical Interfaces*
- 2019 - ongoing Herve Harvard, FEIT, UTS Sydney, *Geometry processing for Industry*
- 2017-2021 Stefano Nuvoli, University of Cagliari, *Retopology for blending quad-dominant meshes*
- 2017-2022 Thomas Alderighi, University of Pisa, *Computational Desing*
- 2013-2017 Giorgio Marcias, Computer Science, University of Pisa, *Modelling for Entertainment Industry*
- 2013-2017 Luigi Malomo, Computer Science, University of Pisa, *Geometry Processing*

Supervised Master Thesis

- Mirto Randellini, University of Milan and UTS Sydney, *Non-Rigid Alignment* (2024)
- Anna Eggler, ETH Zurich and UTS Sydney, *Digital Fashion Design* (2023)
- Elena Corio, University of Pisa, *Construction and Architectural Engineering An innovative sail-shaped shelter for the Ancient Ships Archaeological Site of Pisa* (2016)
- Rosario Aiello, University of Pisa, Computer Science, *Fast arbitrary geodesic computation on triangular meshes* (2014)
- Giuseppe Alemanno, University of Pisa, Computer Science *Decomposing 3D Shapes into modular Low Reliefs* (2013)
- Gregorio Palmas, Computer Science, University of Pisa, *Computer-Assisted Assembling of Fragmented Objects* (2012)
- Blazej Kubiak, Technical University of Łódź, Poland, *A robust method for real-time thread simulation* (2007)

ATTIVITÀ DI TUTORATO DEGLI STUDENTI DI CORSI DI LAUREA E DI LAUREA MAGISTRALE E DI TUTORATO DI DOTTORANDI DI RICERCA

PHD Courses

- *Introduction to Geometry Processing* - University of Technology Sydney, Australia

Master Students

- Samuel McKenzie-Sell, UTS Sydney, *Cutting Deformable Polyhedra* (2024)
- Joy Dhar, UTS Sydney, *Pixel to Product* (2024)
- James Davies-Fox, UTS Sydney, *Environmental light estimation for augmented reality (AR)* (2024)
- Tuan Kiet Phan, UTS Sydney, *Metaverse in the Built Environment* (2024)
- James Carlsson, UTS Sydney, *Implicit mesh sculping* (2023)
- Hassan Rehan *Ease in Implementing Computer Vision Based Cheating in FPS Games*(2023)
- James Kerr, UTS Sydney *Ball tracker in Unity* (2023)
- Matthew Barrett, UTS Sydney, *Molecular Visualization system* (2022)
- Marjan Safvati, UTS Sydney *3D Sound in Unity* (2022)
- Jack Coggins, UTS Sydney *NPR Rendering* (2022)

- Yuzhi Liu, UTS Sydney *Parafashion, 3D parametric fashion design* (2021)
- Jacob Willis, UTS Sydney, *Bioprint Simulation* (2021)

AWARDS AND HONORS OF MY SUPERVISED STUDENTS

- Anna Maria Eggler, ETH, visiting UTS, **Gold Medal for best Masther Thesis** ETH Zurich 2023
- Thomas Alderighi, University of Pisa, **PhD Thesis Honorable Mention 2022**, Eurographics Association
- Stefano Nuvoli, University of Cagliari and UTS Sydney, **best Italian PhD thesis** in Graphics in 2021, Eurographics Association
- Matteo Bracci, University of Pisa, **Best BSc Thesis** in graphics 2019, Eurographics Association
- Elena Corio, University of Pisa, **best italian master thesis** in graphics 2016, Eurographics Association

SEMINARI

Invited Talks

- **University of Cagliari** *The fragile art of 3D meshing*, as part of my appointment as Visiting Professor (2023)
- **3D Printech** 3D printing technology and research world forum, Frankfurt, Germany, *Engineering and imagination: Advanced computational design to manufacturing* (2021)
- **Adobe Research**, Remote due to Covid *Introducing Quadmixer* (2020)
- **Frames 2019** First Workshop on Frame-based hex meshing *HexaLab (online visualization) and Loopy Cuts: Surface-Field Aware Block Decomposition for Hex-Meshing* (2019)
- **Sydney Design Festival** *Engineering the Imagination: advanced computational design to manufacturing* (2019)
- **Computational Aspects of Fabrication**, Schloss Dagstuhl, Leibniz Center for Informatics, Germany *Molding is the new Black* (2019)
- **Visualisation Matters 2018**, Sydney, Australia *Molding is the new Black* (2018)
- **Universidade Federal do Rio**, Rio De Janeiro, Brasil , as part of my appointment as Visiting Professor *Quad Meshing (~4 hours 1 day)* (2013)
- **University of Brighton**, UK *3D models for the Cultural Heritage: beyond plain visualization (~2 hours 1 day)* (2012)
- **Disney Animation Studios**, Burbank, USA *Quad Mesh Processing (~2 hours 1 day)* (2010)

International Talks

- **A Course on Hex-Mesh Generation and Processing**, speakers: Nico Pietroni, Marco Livesu
ACM SIGGRAPH ASIA 2022 Courses - 2022 DOI <https://doi.org/10.1145/3550495.3558207>
- **State of the Art on Stylized Fabrication** speakers: Nico Pietroni, Paolo Cignoni
ACM SIGGRAPH ASIA 2019 Courses - 2019 DOI <https://doi.org/10.1145/3355047.3359411>
- **Digital Fabrication Technologies for Cultural Heritage (STAR)** speakers: Nico Pietroni, Paolo Cignoni
Eurographics Workshops on Graphics and Cultural Heritage EG GCH 2014 DOI <http://dx.doi.org/10.2312/gch.20141306> See <https://dl.acm.org/doi/10.1145/3355047.3359411>
- **Quad Meshing** speakers: Nico Pietroni, Marco Tarini Eurographics 2012 State of the Art report DOI: 10.2312/conf/EG2012/stars/159-182 see http://www.eurographics2012.it/program_st.html

Courses for Industry

- **3D Graphics for Web Canon Information System Research**, Australia Sydney
Course on real time rendering and Three.js (~12 hours 2 days) (2018)
In this course I provided an overview all the main techniques for real-time rendering on the web
- **3D Scanning and Geometry Processing Canon Information System Research**, Australia Sydney (2016)
Course on 3D scanning, geometry processing and shape analysis (~84 hours 14 days) *In this course I provided an overview all the main techniques for geometry processing, remeshing and shape analysis with particular focus on applications such as fabrication and mesh reconstruction.*
- **Geometry Processing Canon Information System Research**, Australia Sydney
Course on geometry processing and exercise in C++ (~54 hours 9 days) *In this course I provided an overview all the main functionalities of the VCG library and Meshlab* (2015)

Art exhibitions (Using the Technologies I developed in 2 papers)

- Sydney Contemporary 2024, *Most important Art Fair in Australia* with Lennox St Gallery (2024)
- Between life and death, Finalist of North Sydney Art Prize 2024, Sydney (2024)
- Obscura, Lennox St Gallery, Melbourne (2023)
- Finalist of 2023 Wynne Prize, ART Gallery of New South Wales *Most important figure sculpture art prize in Australia*, Title: *A Very Dutch Ghost*, selected 40 out of ~ 800 submissions (2023)
- Sydney Contemporary 2022, *Most important Art Fair in Australia* with Nanda/Hobbs Gallery (2022)
- Finalist of Fisher's Ghost Art Prize 2022, Sydney (2022)
- Finalist of North Sydney Art Prize 2022, Sydney (2022)

Architectural Installation (Using the Technologies I developed in 4 papers)

<p>Francesco Laccone, Luigi Malomo, Nico Pietroni, Paolo Cignoni, Tim Schork Flexmaps Pavillon 2 (Temporary installation) Apr - July 2019 UTS DAB Faculty</p>	
<p>Francesco Laccone, Luigi Malomo, Jésus Pérez, Nico Pietroni, Federico Ponchio, Bernd Bickel, Paolo Cignoni Flexmaps Pavillon Temporary installation, 22 May - 21 Nov 2021 Venice Biennale of Architecture, 18-20 October 2019 Maker Faire Rome, 7-11 October 2019 IASS Barcelona</p>	
<p>Nico Pietroni, Marco Tarini, Amir Vaxman, Daniele Panozzo, Paolo Cignoni Nerves of Steel, Permanent Sculpture at CNR of Italy</p>	

ATTIVITÀ DI RICERCA SCIENTIFICA

Google Scholar: H-index: 32 Citations: 3539,
<https://scholar.google.it/citations?user=BXxHVPkAAAAJ&hl=en>

JOURNAL PUBLICATIONS

2024	<ul style="list-style-type: none"> • <i>Q1 Bending-Reinforced Grid Shells for Free-form Architectural Surfaces</i> F Laccone, N Pietroni, P Cignoni, L Malomo Computer-Aided Design 168, 103670 DOI: https://doi.org/10.1016/j.cad.2023.103670 • <i>Q1 Automated Shotcrete: A More Sustainable Construction Technology</i> G Isaac, P Nicholas, G Paul, N Pietroni, T Vidal Calleja, M Xie, T Schork Sustainable Engineering: Concepts and Practices, 331-345 • <i>Q1 Design and construction of catenary-ruled surfaces</i> Zhi Li, Ting-Uei Lee, Nico Pietroni, Roland Snooks, Yi Min Xie Structures 59, 105755 DOI: https://doi.org/10.1016/j.istruc.2023.105755 • <i>Q1 Reducing the Number of Different Faces in Free-Form Surface Approximations Through Clustering and Optimization</i> Y Liu, TU Lee, AR Javan, N Pietroni, YM Xie Computer-Aided Design, Computer-Aided Design 166, 103633 DOI: https://doi.org/10.1016/j.cad.2023.103633
2023	<ul style="list-style-type: none"> • <i>Q1 Physically-based simulation of elastic-plastic fusion of 3D bioprinted spheroids</i> H Bahrami, F Sichetti, E Puppo, L Vettori, C Liu Chung Ming, S Perry, C Gentile, N Pietroni Biofabrication, Volume 15, N 4 DOI: 10.1088/1758-5090/acf2cb • <i>Q1 HexBox: Interactive Box Modeling of Hexahedral Meshes</i> Zoccheddu Francesco, Gobetti Enrico, Livesu Marco, Nico Pietroni, Yi Min Computers Graphics Forum - SGP 2023 , Volume 42, N 5 DOI: https://doi.org/10.1111/cgf.14899 • <i>Q2 Bending the light: Next generation anamorphic sculptures</i> Louis Pratt, Andrew Johnston, Nico Pietroni Computers & Graphics -Special Section on SMI 2023 , DOI: https://doi.org/10.1016/j.cag.2023.05.023 • <i>Q1 Reducing the number of different nodes in space frame structures through clustering and optimization</i> Yuanpeng Liu, Ting-Uei Lee, Antiopi Koronaki, Nico Pietroni, Yi Min Xie Engineering Structures, Engineering Structures 284, 116016 DOI:https://doi.org/10.1016/j.engstruct.2023.116016 • <i>Q1 Reflections on light: Developing new methods for producing anamorphic sculpture</i> Louis Pratt, Andrew Johnstone, Nico Pietroni, MIT Leonardo, 56 (6): 568-574 DOI:https://doi.org/10.1162/leon_a_02368
2022	

- **Q1 SkinMixer: Blending 3D Animated Models** Stefano Nuvoli, **Nico Pietroni**, Riccardo Scateni, Paolo Cignoni, Marco Tarini **ACM Transactions on Graphics** 41 Issue 6 N 250, Siggraph Asia 2022 DOI: <https://doi.org/10.1145/3550454.3555503>
- **Q3 Design And Construction Of a Bending-Active Plywood Structure: The Flexmaps Pavilion** Francesco Laccone, Luigi Malomo, Marco Callieri, Thomas Alderighi, Alessandro Muntoni, Federico Ponchio, **Nico Pietroni**, Paolo Cignoni **Journal of the International Association for Shell and Spatial Structures** Volume 63, Number 2 DOI: <https://doi.org/10.20898/j.iass.2022.007>
- **Q1 Hex-Mesh Generation and Processing: a Survey** **Nico Pietroni**, Nico Pietroni, Marcel Campen, Alla Sheffer, Gianmarco Cherchi, David Bommes, Xifeng Gao, Riccardo Scateni, Franck Ledoux, Jean-Francois Remacle, Marco Livesu **ACM Transactions on Graphics** Volume 42, Issue 2, Article No.: 16, pp 1-44 DOI: <https://doi.org/10.1145/3554920>
- **Q1 State of the art in computational mold design** Thomas Alderighi, Luigi Malomo, Thomas Auzinger, Bernd Bickel, Paolo Cignoni, Nico Pietroni **Computer Graphics Forum** Volume 41, Issue 6, Pages 435-452 DOI: <https://doi.org/10.1145/3554920>
- **Q1 Computational Pattern Making from 3D Garment Models** **Nico Pietroni**, Corentin Dumery, Raphael Guenot-Falque, Mark Liu, Teresa Vidal-Calleja, Olga Sorkine-Hornung **ACM Transactions on Graphics** - Volume 41 Issue 4 N 157 pp 1-14, Siggraph 2022 DOI: <https://doi.org/10.1145/3528223.3530145>

2021

- **Q1 Volume decomposition for two-pieces rigid casting** Thomas Alderighi , Luigi Malomo, Bernd Bickel, Paolo Cignoni, **Nico Pietroni** **ACM Transactions on Graphics** - Siggraph Asia 2021,(TOG) Volume 40 (6), 1-14 DOI: <https://doi.org/10.1145/3478513.3480555>
- **Q1 Integrated computational framework for the design and fabrication of doubly-curved bending-active structures made from flat sheet material** Francesco Laccone , Luigi Malomo, **Nico Pietroni** , Paolo Cignoni, Tim Schork **Structures** - 2021 - Volume 34, 979-994 DOI: <https://doi.org/10.1016/j.istruc.2021.08.004>
- **Q1 Reliable Feature-Line Driven Quad-Remeshing** **Nico Pietroni**, Stefano Nuvoli, Thomas Alderighi, Paolo Cignoni, Marco Tarini **ACM Transactions on Graphics** - Siggraph 2021, Volume 40 Issue 4 DOI: <https://doi.org/10.1145/3450626.3459941>
- **Q1 Automatic Surface Segmentation for Seamless Fabrication Using 4-axis Milling Machines** Stefano Nuvoli, Alessandro Tola, Alessandro Muntoni, **Nico Pietroni**, Enrico Gobbetti, Riccardo Scateni **Computer Graphics Forum**, 40 (2), 191-203, Eurographics 2021 DOI : 0.1111/cgf.142625

2020

- **Q1 LoopyCuts: Practical Feature-Preserving Block Decomposition** Marco Livesu *, **Nico Pietroni** *, Enrico Puppo, Alla Sheffer, Paolo Cignoni ; *Joint first authors **ACM Transactions on Graphics** - Siggraph 2020, Volume 39, Number 4 - July 2020 DOI: <https://doi.org/10.1145/3386569.3392472>
- **Q1 Reinforcement of General Shell Structures** Gil Ureta, **Nico Pietroni**, D Zorin **ACM Transactions on Graphics**, June 2020 Article No.: 153 DOI : <https://doi.org/10.1145/3375677>
- **Q1 Skeleton-Based Conditionally Independent Gaussian Process Implicit Surfaces for Fusion in Sparse to Dense 3D Reconstruction** L Wu, R Falque, V Perez-Puchalt, L Liu, **Nico Pietroni**, T Vidal-Calleja **IEEE Robotics and Automation Letters** 5 (2), 1532-1539 DOI: <https://doi.org/10.1109/LRA.2020.2969175>
- **Q1 Automatic Design of Cable-Tensioned Glass Shells** Francesco Laccone, Luigi Malomo , Maurizio Froli , Paolo Cignoni, **Nico Pietroni** **Computer Graphics Forum** ,Volume 39 (1), 260-273 DOI: <https://doi.org/10.1111/cgf.13801>
- **Q2 A bending-active twisted-arch plywood structure: computational design and fabrication of the FlexMaps Pavilion** Francesco Laccone, Luigi Malomo, Jesús Pérez, **Nico Pietroni**, Federico Ponchio, Bernd Bickel, Paolo Cignoni **SN Applied Sciences**, Volume 2, August 2020 DOI: <https://doi.org/10.1007/s42452-020-03305-w>

2019

- **Q1 QuadMixer: layout preserving blending of quadrilateral meshes** Stefano Nuvoli, Alex Hernandez, Claudio Esperanca, Riccardo Scateni, Paolo Cignoni, **Nico Pietroni** **ACM Transactions on Graphics** , Volume 38, Issue 6, November 2019 - Siggraph Asia 2019 DOI: <https://doi.org/10.1145/3355089.3356542>
- **Q1 Volume-Aware Design of Composite Molds** Thomas Alderighi, Luigi Malomo, Daniela Giorgi, Bernd Bickel, Paolo Cignoni, **Nico Pietroni** **ACM Transactions on Graphics** , Volume 38, Number 4 - ACM Siggraph 2019 DOI : <https://doi.org/10.1145/3306346.3322981>
- **Q1 HexaLab.net: an Online Viewer for Hexahedral Meshes** Matteo Bracci, Marco Tarini, **Nico Pietroni**, Marco Livesu, Paolo Cignoni **Computer Aided Design**, Volume 110, May 2019, Pages 24-36 DOI: <https://doi.org/10.1016/j.cad.2018.12.003>

2018

- **Q1 FlexMaps: Computational Design of Flat Flexible Shells for Shaping 3D Objects** Luigi Malomo, Jesús Pérez Rodríguez, Emmanuel Iarussi, **Nico Pietroni**, Eder Miguel, Paolo Cignoni, Bernd Bickel **ACM Transactions on Graphics** , Volume 37 Issue 6, Article No. 241 - Siggraph Asia 2018 DOI: <https://doi.org/10.1145/3272127.3275076>

- **Q1 Metamolds: Computational Design of Silicone Molds** Thomas Alderighi, Luigi Malomo, Daniela Giorgi, Nico Pietroni, Bernd Bickel, Paolo Cignoni **ACM Transactions on Graphics** , Volume 37 Issue 4, August 2018 Article No. 136 - ACM Siggraph 2018 DOI: <https://doi.org/10.1145/3197517.3201381>
- **Q1 State of the Art on Stylized Fabrication** Bernd Bickel, Paolo Cignoni, Luigi Malomo **Nico Pietroni Computer Graphics Forum**, Volume 37, Issue 6 September 2018 ,pages 325-342. DOI: <https://doi.org/10.1111/cgf.13327>,

2017

- **Q1 Digital Fabrication Techniques for Cultural Heritage: A Survey** Roberto Scopigno, Paolo Cignoni, Nico Pietroni, Marco Callieri, Matteo Dellepiane **Computer Graphics Forum** Volume 36, Issue 1, January 2017, Pages 6D21DOI: <https://doi.org/10.1111/cgf.12781>
- **Q1 Position Based Tensegrity Design** Nico Pietroni, Marco Tarini, Amir Vaxman, Daniele Panozzo, Paolo Cignoni **ACM Transactions on Graphics**, Volume 36 Issue 6, November 2017 - ACM Siggraph Asia 2017 DOI: <https://doi.org/10.1145/3130800.3130809>

2016

- **Q1 FlexMolds: Automatic Design of Flexible Shells for Molding** Luigi Malomo, Nico Pietroni, Bernd Bickel, Paolo Cignoni **ACM Transactions on Graphics**, Volume 35, Number 6 - ACM Siggraph Asia 2016 DOI: <https://doi.org/10.1145/2980179.2982397>
- **Q1 Tracing Field-Coherent Quad Layouts** Nico Pietroni, Enrico Puppo, Giorgio Marcias, Roberto Scopigno, Paolo Cignoni **Computer Graphics Forum**, Volume 35, Number 7 - Pacific Graphics 2016 DOI: <https://doi.org/10.1111/cgf.13045>
- **Q1 Stability of Statics Aware Voronoi Grid-Shells** Davide Tonelli, Nico Pietroni, Enrico Puppo, Maurizio Froli, Paolo Cignoni, Gennaro Amendola, Roberto Scopigno **Engineering Structures**, Volume 116, Number 1, page 70-82 - june 2016 DOI : <https://doi.org/10.1016/j.engstruct.2016.02.049>
- **Q4 Conception and parametric design workflow for a timber large-spanned reversible grid shell to shelter the archaeological site of the Roman Shipwrecks in Pisa** Elena Corio, Francesco Laccone, Nico Pietroni, Paolo Cignoni, Maurizio Froli **International Journal of Computational Methods and Experimental Measurements**, Volume 5 pp 551-661 DOI: <https://doi.org/10.2495/CMEM-V5-N4-551-561>

2015

- **Q1 Data-Driven Interactive Quadrangulation** Giorgio Marcias, Kenshi Takayama , Nico Pietroni, Daniele Panozzo, Olga Sorkine-Hornung, Enrico Puppo, Paolo Cignoni **ACM Transactions on Graphics**, Volume 34, Number 65 - ACM Siggraph 2015 DOI: <https://doi.org/10.1145/2766964>
- **Q1 Elastic Textures for Additive Fabrication** Julian Panetta, Qingnan Zhou, Luigi Malomo, Nico Pietroni, Paolo Cignoni, Denis Zorin **ACM Transactions on Graphics**, Volume 34, Number 4 - ACM Siggraph 2015 DOI: <https://doi.org/10.1145/2766937>
- **Q1 Statics Aware Grid Shells** Nico Pietroni, Davide Tonelli, Enrico Puppo, Maurizio Froli, Roberto Scopigno, Paolo Cignoni **Computer Graphics Forum**, Volume 34, Number 2, - Eurographics DOI : <https://doi.org/10.1111/cgf.12590>
- **Q3 Compression and Querying of Arbitrary Geodesic Distances** Rosario Aiello, Francesco Banterle, Nico Pietroni, Luigi Malomo, Paolo Cignoni, Roberto Scopigno **Lecture Notes in Computer Science**, Volume 9279 pp 282-293 DOI: https://doi.org/10.1007/978-3-319-23231-7_26

2014

- **Q1 Robust Field-aligned Global Parametrization** Ashish Myles, Nico Pietroni, Denis Zorin **ACM Transactions on Graphics**, Volume 33, Number 4 - ACM Siggraph 2014 DOI: <https://doi.org/10.1145/2601097.2601154>
- **Q1 Field-Aligned Mesh Joinery** Paolo Cignoni, Nico Pietroni, Luigi Malomo, Roberto Scopigno **ACM Transactions on Graphics**, Volume 33, Number 1 - ACM Siggraph Asia 2014 DOI: <https://doi.org/10.1145/2537852>

2013

- **Q1 Animation-Aware Quadrangulation** Giorgio Marcias, Nico Pietroni, Daniele Panozzo, Enrico Puppo, Olga Sorkine **Computer Graphics Forum**, Volume 32, Issue 5 - Symposium on Geometry Processing 2013 DOI: <https://doi.org/10.1111/cgf.12183>
- **Q1 Quad-Mesh Generation and Processing: a survey** David Bommes, Bruno Lévy, Nico Pietroni, Enrico Puppo, Claudio Silva, Marco Tarini, Denis Zorin **Computer Graphics Forum** Volume 32, Number 6 ,Eurographics 2012 State of the Art Report DOI: <https://doi.org/10.1111/cgf.12014>

2011

- **Q1 An interactive local flattening operator to support digital investigations on artwork surfaces** Nico Pietroni, Massimiliano Corsini, Paolo Cignoni, Roberto Scopigno **IEEE Transactions on Visualization and Computer Graphics** - IEEE Visualization 2011 DOI: <https://doi.org/10.1109/TVCG.2011.165>
- **Q1 Simple Quad Domains for Field Aligned Mesh Parametrization** Marco Tarini, Enrico Puppo, Daniele Panozzo, Nico Pietroni, Paolo Cignoni **ACM Transactions on Graphics**, Volume 30, Number 6 - ACM SIGGRAPH Asia 2011DOI: <https://doi.org/10.1145/2070781.2024176>

	<ul style="list-style-type: none"> • Q1 Global Parametrization of Range Image Sets Nico Pietroni, Marco Tarini, Olga Sorkine, Denis Zorin <i>ACM Transactions on Graphics</i>, Volume 30, Number 6 - ACM SIGGRAPH Asia 2011 DOI: https://doi.org/10.1145/2070781.2024183 • Q1 Automatic Construction of Adaptive Quad-Based Subdivision Surfaces Using Fitmaps Daniele Panozzo, Enrico Puppo, Marco Tarini, Nico Pietroni, Paolo Cignoni <i>IEEE Transactions on Visualization and Computer Graphics</i>, Volume 17, Number 10 DOI: https://doi.org/10.1109/TVCG.2011.28 • Q3 New techniques for computer-based simulation in surgical training Giuseppe Turini, Nico Pietroni, Giuseppe Megali, Fabio Ganovelli, Andrea Pietrabissa, Franco Mosca <i>International Journal of Biomedical Engineering and Technology (IJBET)</i>, Volume 5, Number 4 DOI: https://doi.org/10.1504/IJBET.2011.039923
2010	
	<ul style="list-style-type: none"> • Q1 Almost isometric mesh parameterization through abstract domains Nico Pietroni, Marco Tarini, Paolo Cignoni <i>IEEE Transactions on Visualization and Computer Graphics</i>, Volume 16, Number 4 DOI: https://doi.org/10.1109/TVCG.2009.96 • Q1 Feature-aligned T-meshes Ashish Myles, Nico Pietroni, Denis Kovacs, Denis Zorin <i>ACM Transactions on Graphics</i>, Volume 29, Number 4 - ACM Siggraph 2010 DOI: https://doi.org/10.1145/1778765.1778854 • Q1 Practical quad mesh simplification Marco Tarini, Nico Pietroni, Paolo Cignoni, Daniele Panozzo, Enrico Puppo <i>Computer Graphics Forum</i>, Volume 29, Number 2 - EUROGRAPHICS 2010 DOI: https://doi.org/10.1111/j.1467-8659.2009.01610.x • Q2 Real-time Single Scattering Inside Inhomogeneous Materials Daniele Bernabei, Fabio Ganovelli, Nico Pietroni, Paolo Cignoni, Sumanta Pattanaik, Roberto Scopigno <i>The Visual Computer</i>, Volume 26, Number 6-9 - CGI 2010 DOI: https://doi.org/10.1007/s00371-010-0449-7 • Q2 Solid-Texture Synthesis: A Survey, Nico Pietroni, Paolo Cignoni, Miguel A. Otaduy, Roberto Scopigno <i>IEEE Computer Graphics and Applications</i>, Volume 30, Number 4 DOI: https://doi.org/10.1109/MCG.2009.153
2009	
	<ul style="list-style-type: none"> • Q2 Splitting Cubes: a fast and robust technique for virtual cutting. Nico Pietroni, Fabio Ganovelli, Paolo Cignoni, Roberto Scopigno. <i>The Visual Computer</i>, Volume 25, Number 3 DOI: https://doi.org/10.1007/s00371-008-0216-1
2008	
	<ul style="list-style-type: none"> • Q1 Reconstructing head models from photographs for individualized 3D-audio processing Matteo Dellepiane, Nico Pietroni, Nicolas Tsingos, Manuel Asselot, Roberto Scopigno <i>Computer Graphics Forum</i>, Volume 27, Number 7 special issue of <i>Pacific Graphics 2008</i> DOI: https://doi.org/10.1111/j.1467-8659.2008.01316.x
2007	
	<ul style="list-style-type: none"> • Q1 Texturing internal surfaces from a few cross sections. Nico Pietroni, Miguel A. Otaduy, Bernd Bickel, Fabio Ganovelli, and Markus H. Gross. <i>Computer Graphics Forum</i>, Volume 26, Number 3 - Eurographics 2007 DOI: https://doi.org/10.1111/j.1467-8659.2007.01087.x

INTERNATIONAL CONFERENCES

2023	
	<ul style="list-style-type: none"> • Statics and Stability of Bending-Optimized Double-Layer Grid Shell F Laccone, N Pietroni, M Froli, P Cignoni, L Malomo <i>Italian Workshop on Shell and Spatial Structures</i>, 569-578 • A Neural Network-based Low-cost Soft Sensor for Touch Recognition and Deformation Capture Yifan Fan, Nico Pietroni, Sam Ferguson <i>Proceedings of the 2023 ACM Designing Interactive Systems Conference 2023</i> DOI: https://doi.org/10.1145/3563657.3595963
2020	
	<ul style="list-style-type: none"> • Automated Design and Analysis of Reinforced and Post-Tensioned Glass Shells Francesco Laccone, Luigi Malomo, Nico Pietroni, Maurizio Froli, Paolo Cignoni <i>Challenging Glass Conference Proceedings</i>, Sep 2020 DOI : 10.7480/cgc.7.4496 • Suckers Emission Detection and Volume Estimation for the Precision Farming of Hazelnut Orchards Ciro Potena; Renzo Fabrizio Carpio; Nico Pietroni ; Jacopo Maiolini; Giovanni Ulivi; Emanuele Garone; Andrea Gasparri <i>I2020 IEEE Conference on Control Technology and Applications (CCTA)</i> DOI: 10.1109/CCTA41146.2020.9206335
2019	
	<ul style="list-style-type: none"> • FlexMaps Pavilion: a twisted arc made of mesostructured flat flexible panels Francesco Laccone, Luigi Malomo, Jesus Perez, Nico Pietroni, Federico Ponchio, Bernd Bickel, Paolo Cignoni <i>IASS 2019: FORM and FORCE</i>

	<ul style="list-style-type: none"> • <i>Concept and cable-tensioning optimization of post-tensioned shells made of structural glass</i> Francesco Laccone, Luigi Malomo, Maurizio Froli, Paolo Cignoni, Nico Pietroni IASS 2019: FORM and FORCE
2016	
	<ul style="list-style-type: none"> • <i>Design and Fabrication of Grid-shells Mockups</i> Davide Tonelli, Nico Pietroni, Paolo Cignoni, Roberto Scopigno STAG: Smart Tools and Apps for Graphics - 2016 DOI: 10.2312/stag.20161360 • <i>State Of The Art on Functional Fabrication</i> Asla Medeiros e Sá, Karina Rodriguez Echavarria, Nico Pietroni, Paolo Cignoni Eurographics Workshop on Graphics for Digital Fabrication (2016) DOI: 10.2312/gdf.20161073
2014	
	<ul style="list-style-type: none"> • <i>Digital Fabrication Technologies for Cultural Heritage (STAR)</i> Roberto Scopigno, Paolo Cignoni, Nico Pietroni, Marco Callieri, Matteo Dellepiane Eurographics Workshops on Graphics and Cultural Heritage, EG GCH 2014 DOI: 10.2312/gch.20141306 • <i>Interlocking pieces for printing tangible Cultural Heritage replicas</i> Giuseppe Alemanno, Paolo Cignoni, Nico Pietroni, Federico Ponchio, Roberto Scopigno Eurographics Workshops on Graphics and Cultural Heritage, EG GCH 2014, page 145-154 DOI: 10.2312/gch.20141312
2013	
	<ul style="list-style-type: none"> • <i>A computer-assisted constraint-based system for assembling fragmented objects</i> G. Palmas, Nico Pietroni, P. Cignoni and R. Scopigno Proc. of IEEE Digital Heritage 2013 International Congress DOI: 10.1109/DigitalHeritage.2013.6743793
2010	
	<ul style="list-style-type: none"> • <i>Adaptive Quad Mesh Simplification</i> Agostino Bozzo, Daniele Panozzo, Enrico Puppo, Nico Pietroni, Luigi Rocca Proc. of IEurographics Italian Chapter Conference 2010 DOI: 10.2312/LocalChapterEvents/ItalChap/ItalianChapConf2010/095-10
2007	
	<ul style="list-style-type: none"> • <i>Techniques for Computer Assisted Surgery</i> Giuseppe Turini, Nico Pietroni, Fabio Ganovelli, Roberto Scopigno Proc. of IEurographics Italian Chapter Conference 2007 DOI: 10.2312/LocalChapterEvents/ItalChap/ItalianChapConf2007/155-160 • <i>A robust method for real-time thread simulation</i> Blazej Kubiak, Nico Pietroni, Fabio Ganovelli, and Marco Fratarcangeli. ACM VRST 2007, Newport Beach, California, USA DOI: 10.1145/1315184.1315198
2005	
	<ul style="list-style-type: none"> • <i>Robust segmentation of anatomical structures with deformable surfaces and marching cubes</i> Nico Pietroni, Andrea Giachetti, Fabio Ganovelli VRIPHYS 2005 Workshop On Virtual Reality Interaction and Physical Simulation DOI: 10.1016/j.ics.2005.03.274

ORGANIZZAZIONE, DIREZIONE E COORDINAMENTO DI CENTRI O GRUPPI DI RICERCA NAZIONALI E INTERNAZIONALI O PARTECIPAZIONE AGLI STESSI

CENTERS OF EXCELLENCE

2003-2007
<ul style="list-style-type: none"> • <i>Endocas: Center of Excellence on Computer-Aided Surgery</i> see http://www.endocas.org. Role: Participant Investigator Type: National Project MIUR

GRANTS

2023
<ul style="list-style-type: none"> • SPACE RESEARCH NETWORK Automating the fit process for spacesuit design & manufacturing Role: Project Coordinator Funding (AUD): 30000
2022
<ul style="list-style-type: none"> • CROSS-FACULTY GRANT: <i>Games of Protein</i>, Role: Project Coordinator, Funding (AUD): 50000 • CAPEX PROJECT: <i>New devices for Digital Fashion</i> Role: Chief Investigator Funding (AUD):320000
2021
<ul style="list-style-type: none"> • CRC-P Project: <i>Shoulder Replacement Implant Design for Additive Manufacturing</i>, Role: Chief Investigator, Funding (AUD): 600000 • CROSS-FACULTY GRANT <i>Development of an Integrated Additive Manufacturing Framework for Robotic Shotcrete 3D Printing of Sustainable Free-Form Architecture</i> Role: Chief Investigator Funding (AUD): 20000 • CROSS-FACULTY GRANT <i>Smart sculptures: renewable energy power generators as engaging public artworks</i>, Role: Chief Investigator Funding (AUD): 15000

	<ul style="list-style-type: none"> <i>CROSS-FACULTY GRANT Change Detection Visualisation for Real-time 3D scene evolution</i> Role: Chief Investigator Funding (AUD): 12500
2019	
	<ul style="list-style-type: none"> <i>Towards an integrated Design-Robotic Architecture</i> Role: Chief Investigator Funding (AUD): 20000
2018	
	<ul style="list-style-type: none"> <i>UI/UX Prototype Development (Stage 2) & Core Tech Industrialisation</i> Role: Chief Investigator Funding source(s): Tailors Mark & Innovation Connections Grant Funding amount (\$): 154000
2016-2019	
	<ul style="list-style-type: none"> <i>DSurf: Scalable Computational Methods for 3D Printing Surfaces</i> Role: Chief Investigator type : Research projects of national interest (PRIN) (Italian Ministry of Research) Total Founds (e): 549.436 Partners: Cnr of Italy, Univ. degli Studi di ROMA "La Sapienza", Univ. degli Studi di GENOVA, Univ. degli Studi INSUBRIA Varese-Como, Univ. degli Studi di CAGLIARI, Univ. degli Studi di VERONA. <i>Emotive Virtual cultural Experiences through personalized storytelling</i> (2016-2019), https://cordis.europa.eu/project/rcn/205688_en.html (https://www.emotiveproject.eu) Role: Participant Investigator Type: H2020-SC6-CULT-COOP-2016 Project ID: 727188 Total Founds (e): 2646447
2013-2016	
	<ul style="list-style-type: none"> Harvest4D - Harvesting Dynamic 3D Worlds from Commodity Sensor Clouds (2013-2016), https://harvest4d.org Role: Participant Investigator Type: EC 7FP - no: 323567 Total Founds (e): 2700000 Partners: TU Wien, University of Bonn, IMT Paris, Cnr of Italy, Delft University ARIADNE: advanced research infrastructure for archaeological dataset networking in Europe (2013-2016) http://www.ariadne-infrastructure.eu Role: Participant Investigator Type: EC INFRA-2012 agreement 313193 Total Founds (e): 382103
2011-2015	
	<ul style="list-style-type: none"> <i>V-MUST.NET: How museums will look in the future</i> (2011-2015) see: https://cordis.europa.eu/project/rcn/101496_en.html Role: Participant Investigator Type: EC 7thFW NoE agreement 270404 Total Founds (e): 4 550 000
2009-2011	
	<ul style="list-style-type: none"> <i>Project START, Developing technologies for cultural heritage applications</i> Role: Participant Investigator Type: POR, Tuscany Region
2008-2012	
	<ul style="list-style-type: none"> <i>3DCOFORM: Tools and Expertise for 3D Collection Formation</i> (2008-2012) see: https://cordis.europa.eu/project/rcn/89256_en.html (http://www.3d-coform.eu/) Role : Participant Investigator Type: EU FP7 IST IP grant no. 231809 Total Founds (e): 8 449 994
2005-2008	
	<ul style="list-style-type: none"> <i>CROSSMOD: Cross-Modal Perceptual Interaction and Rendering: a New Generation of Audiovisual Virtual Environments</i> (2005-2008) see: https://cordis.europa.eu/project/rcn/86392_en.html Role : Participant Investigator Type: European EU IST FET, contract number 014891. Total Founds (e): 1555000

ATTIVITÀ QUALI LA DIREZIONE O LA PARTECIPAZIONE A COMITATI EDITORIALI DI RIVISTE SCIENTIFICHE

Conference Organizer	
	<ul style="list-style-type: none"> 2017 Eurographics Workshop On Graphics For Digital Fabrication: Gradifab 2017
Program Chair	
	<ul style="list-style-type: none"> 2023 SGP 2023 Graduate School see: https://sgp2023.github.io/organization/ 2020 Shape Model International https://smi2020.sciencesconf.org/resource/page/id/1 2016 Eurographics Workshop On Graphics For Digital Fabrication: GradiFab 2016 see https://diglib.eg.org/handle/10.2312/gdf20162005
Paper Sorter	
	<ul style="list-style-type: none"> Pacific Graphics see: http://pg2024.hsu.edu.cn
Editorial Board	
	<ul style="list-style-type: none"> 2023-Ongoing Department Editor of IEEE Computer Graphics and Applications (ISSN 2571-9408) 2020-Ongoing Editorial Board Member of Heritage (ISSN 2571-9408) See https://www.mdpi.com/journal/heritage.
Program Committee	

- Pacific Graphics All accepted paper published in Computer Graphics Forum (Q1)
<http://pg2024.hsu.edu.cn/committee.html>
- SIGGRAPH All accepted paper published in ACM Transactions On Graphics (Q1).
<https://s2024.siggraph.org/technical-papers-committee/>
- 2023 SIGGRAPH All accepted paper published in ACM Transactions on Graphics (Q1).
<https://s2023.siggraph.org/technical-papers-committee/>
- 2022 SGP, Symposium of Geometry Processing, Awards Committee
<https://sgp2022.github.io/organization/>
- SMI, Shape Model International, all accepted paper published in Computer & Graphics (Q2).
<https://smi2021.github.io>
- SGP, Symposium of Geometry Processing, all accepted paper published in Computer Graphics Forum (Q1). <https://sgp2021.github.io/organization/>
- SIGGRAPH Asia, all accepted paper published in ACM Transactions On Graphics (Q1).
<https://sa2021.siggraph.org/en/about-us/siggraph-asia-2021-committee/technical-papers-committee>
- 2021 EUROGRAPHICS, all accepted paper published in Computer Graphics Forum (Q1)
<https://conferences.eg.org/eg2021/organization/full-papers-ipc/>
- SIGGRAPH Asia, all accepted paper published in ACM Transactions On Graphics (Q1)
- EUROGRAPHICS, all accepted paper published in Computer Graphics Forum (Q1)
<https://conferences.eg.org/eg20/>
- 2019 PACIFIC GRAPHICS, all accepted paper published in Computer Graphics Forum (Q1) <http://pg19.org>
- 2019 SGP, Symposium of Geometry Processing, all accepted paper published in Computer Graphics Forum (Q1) <https://sgp2019.di.unimi.it/committees.html>
- 2018 PACIFIC GRAPHICS, all accepted paper published in Computer Graphics Forum (Q1)
<http://sweb.cityu.edu.hk/pg2018/>
- 2018 SGP, Symposium of Geometry Processing, all accepted paper published in Computer Graphics Forum (Q1) <https://sgp2018.sciencesconf.org/resource/page/id/4>
- 2018 SMI, Shape Model International, all accepted paper published in Computer & Graphics (Q2) see:
<http://smi2018.tecnico.ulisboa.pt/#event>
- 2017 PACIFIC GRAPHICS, all accepted paper published in Computer Graphics Forum (Q1) see:
<http://www.siggraph.org.tw/pg2017/organizers.html>
- 2017 SMI, Shape Model International, all accepted paper published in Computer & Graphics (Q2) see:
<https://s3pm.icsi.berkeley.edu/s3pm/smi.html>
- 2017 SGP, Symposium of Geometry Processing, all accepted paper published in Computer Graphics Forum (Q1) see: <http://geometry.cs.ucl.ac.uk/SGP2017/?p=committees>
- 2016 PACIFIC GRAPHICS, all accepted paper published in Computer Graphics Forum (Q1) see:
<https://indico.oist.jp/indico/event/0/page/2>
- 2016 SMI Shape Modelling International, all accepted paper published in Computer & Graphics (Q2) see :
<http://igs2016.mi.fu-berlin.de/smi2016/pc.html>
- 2015 PACIFIC GRAPHICS, all accepted paper published in Computer Graphics Forum (Q1) see:
<http://cg.cs.tsinghua.edu.cn/pg2015/>
- 2015 SGP, Symposium of Geometry Processing, all accepted paper published in Computer Graphics Forum (Q1) see: <http://www.geometrie.tugraz.at/sgp2015/contact.php>
- 2015 EUROGRAPHICS Short Paper 2015
see: <http://www.eurographics2015.ch/short-papers-international-program-committee/>
- 2014 PACIFIC GRAPHICS, all accepted paper published in Computer Graphics Forum (Q1) see:
<http://graphics.ewha.ac.kr/PG14/#organizers>
- 2014 SGP Symposium of Geometry Processing, all accepted paper published in Computer Graphics Forum (Q1) see: <http://www.cs.cf.ac.uk/sgp2014/organisation.html>
- 2013 PACIFIC GRAPHICS, all accepted paper published in Computer Graphics Forum (Q1) see:
<http://www.comp.nus.edu.sg/pg2013/>
- 2013 SGP, Symposium of Geometry Processing, all accepted paper published in Computer Graphics Forum (Q1) see: <http://sgp.ge.imati.cnr.it/index.php/2012-11-28-16-40-34>
- 15/18
- 2012 GMP, Geometric Modelling and Processing
see: <http://math.ustc.edu.cn/Conference/GMP2012/Committee.html>
- 2011 SMI, Shape Modelling International, all accepted paper published in Computer & Graphics (Q2) see:
<http://www1.idc.ac.il/SMI2011/organization.html>

TITOLARITÀ DI BREVETTI

- Paolo Cignoni, Nico Pietroni, Luigi Malomo, Bernd Bickel, **European Patent** n. EP3301597
Method for computationally designing a re-usable flexible mold
- Thomas Alderighi, Paolo Cignoni, Luigi Malomo, Daniela Giorgi, Bernd Bickel, **Nico Pietroni US Patent** 11966666
Method for computationally designing a re-usable flexible mold for the reproduction of an object

- Paolo Cignoni, **Nico Pietroni**, Luigi Malomo, Roberto Scopigno, *Mesh joinery: method for converting a 3D model into a set of planar shapes that can be interlocked to compose a self-supporting structure*. Italian Patent n. ITRM20130439A1. Registered in Rome on 2013

PREMI E RICONOSCIMENTI NAZIONALI E INTERNAZIONALI PER ATTIVITÀ DI RICERCA

- **SYMPOSIUM ON GEOMETRY PROCESSING DATASET AWARD** for **HEXALAB**, <http://awards.geometryprocessing.org> Matteo Bracci, Marco Tarini, Marco Livesu, **Nico Pietroni**, Paolo Cignoni.
- **FIRST PRIZE** for **FLEXMAP PAVILLON** at the Competition and Exhibition of innovative lightweight structures organized by the IASS Working Group 21 within the FORM and FORCE, joint international conference of IASS Symposium 2019 and Structural Membranes, see: <https://www.jjo33.com/iass-barcelona-2019> Francesco Laccone, Luigi Malomo, Jesus Perez, **Nico Pietroni**, Federico Ponchio, Bernd Bickel, Paolo Cignoni
- **2017 SYMPOSIUM ON GEOMETRY PROCESSING AWARD** for **MESHLAB**, see: <http://awards.geometryprocessing.org> Paolo Cignoni, Guido Ranzuglia, Marco Callieri, Massimiliano Corsini, Matteo Dellepiane, Marco Di Benedetto, Fabio Ganovelli, Giorgio Marcias, Gianpaolo Palma, **Nico Pietroni**, Federico Ponchio, Luigi Malomo, Marco Tarini Roberto Scopigno
- **2015 SYMPOSIUM ON GEOMETRY PROCESSING AWARD** for **LIBIGL**, *A simple C++ geometry processing library*. see: <http://awards.geometryprocessing.org> Alec Jacobson, Daniele Panozzo, Christian Schüller, Olga Diamanti, Qingnan Zhou, **Nico Pietroni**, Stefan Bruggerr, Kenshi Takayama, Wenzel Jakob, Nikolas De Giorgis, Luigi Rocca, Leonardo Sacht, Olga Sorkine-Hornung
- **2011 ISTI - YOUNG RESEARCHER AWARD** National Research Council Of Italy

PARTECIPAZIONE IN QUALITÀ DI RELATORE A CONGRESSI E CONVEGNI DI INTERESSE INTERNAZIONALE

- *Bending the light: Next generation anamorphic sculptures* **SMI - Shape Modelling International 2023**, Genova, Italy
- *2022 A Course on Hex-Mesh Generation and Processing* **ACM SIGGRAPH Asia 2022**, Daegu, Korea
- *Reliable Feature-Line Driven Quad-Remeshing* **SIGGRAPH 2021** Online Due to Covid
- *LoopyCuts: Practical Feature-Preserving Block Decomposition* **SIGGRAPH 2020**, Online Due to Covid
- *State of the Art on Stylized Fabrication* **ACM SIGGRAPH Asia 2019**, Brisbane, Australia
- *2017 Position Based Tensegrity Design* **ACM SIGGRAPH Asia 2017**, Bangkok, Thailand
- *2016 Tracing Field-Coherent Quad Layouts* **Pacific Graphics 2016**, Okinawa, Japan
- *2014 Digital Fabrication Technologies for Cultural Heritage (STAR)* **EG GCH 2014** Eurographics Workshops on Graphics and Cultural Heritage, Darmstadt, Germany
- *2014 Interlocking pieces for printing tangible Cultural Heritage replicas* **EG GCH 2014** Eurographics Workshops on Graphics and Cultural Heritage, Darmstadt, Germany
- *An interactive local flattening operator to support digital investigations on artwork surfaces* **IEEE Visualization 2011**, Providence, USA
- *Global Parametrization of Range Image Sets* **ACM SIGGRAPH Asia 2017**, Hong Kong, China
- *Feature-aligned T-meshes* **ACM Siggraph 2010**, Los Angeles USA
- *Reconstructing head models from photographs for individualized 3D-audio processing*
- *Pacific Graphics 2008* Tokyo, Japan
- *Texturing internal surfaces from a few cross sections*. **Eurographics 2007**, Prague, Czech Rep.
- *A robust method for real-time thread simulation* **ACM VRST 2007**, Newport Beach, California, USA

ATTIVITÀ GESTIONALI, ORGANIZZATIVE E DI SERVIZIO

INCARICHI DI GESTIONE E AD IMPEGNI ASSUNTI IN ORGANI COLLEGIALI E COMMISSIONI, PRESSO RILEVANTI ENTI PUBBLICI E PRIVATI E ORGANIZZAZIONI SCIENTIFICHE E CULTURALI, OVVERO PRESSO L'ATENEO O ALTRI ATENEI

(inserire incarico/impegno, ente, data, ecc.)

ACADEMIC SERVICE

- *(2022-ongoing) Coordinator of the Master of Information Technology, University of Technology Sydney: As the coordinator of the Master of IT program, I engage in dialogue with students and make strategic decisions regarding the program's structure. Additionally, I collaborate with the administrative team to ensure the timely delivery of documents required by the government for the assessment and approval of the current structure.*
- *(2022-ongoing) PhD Program (HDR) Coordinator, University of Technology Sydney: To date, I have chaired over 60 HDR Candidature Assessments. Since 2022, I have also been responsible for ranking PhD*

applicants annually. This ensures that applicants in our discipline are ranked appropriately, especially considering their often non-traditional backgrounds. In total, I have ranked about 60 applicants.

- *(2022-ongoing) Member of School T&L Committee*, University of Technology Sydney: In this committee, we approve the structures of all the courses within the School of Computer Science, including the assessment and core program components.
- *(2022-2023) Member of our Faculty Board*, Faculty of Engineering and Information Technology, University of Technology Sydney
- *(2020) Committee member* Post Doc position at UTS
- *(2020-2022) Member of the UTS FEIT Equity & Diversity Committee*, University of Technology Sydney: I was working towards assembling a digital photo exhibition involving a famous photographer presenting personal stories of LGBTQI+ people.
- *(2019-ongoing) Panellist* for BIT Cooperative Scholarship interviews, a program for scholarships at UTS.
- *Co-Organizer of the UTS Games Showcase*, University of Technology Sydney: An annual event involving >100 people every year from academia and industry
- *2015 Committee member* research grant (assegno di ricerca) Num 21 Prot.4312 13/11/2015
- *2011 Committee member* Temporary Researcher (Art 23) Num 1 Prot. 843 14/03/2011
- *2011 Committee member* Temporary Researcher (Art 23) Num 2 Prot. 844 14/03/2011

PHD Jury Member

- Marzia Riso, University Sapienza, Roma, Italy (2024)
- Pietro Musoni, University of Verona, Italy (2023)
- Martin Heistermann, University of Bern Switzerland (2023)
- Max Lyon, RWTH Aachen Germany (2023)
- Edoardo Carra, Computer Science, University Sapienza, Rome (2020)
- Gianmarco Cherchi, Computer Science, University of Cagliari (2019)
- Francesco Usai, Computer Science, University of Cagliari (2016)

Project Reviewer

- 2023 INRIA (France) - Evaluation Research Teams
- 2022 European Research Council (ERC) Reviewer for ERC Consolidator Grant Call
- 2022 Austrian Science Fund (FWF)
- 2021 Israel Science Foundation (ISF)
- 2018 European Research Council (ERC) Reviewer for ERC Starting Grant Call

TECHNOLOGY TRASFER

Industry Impact

- **2022 Improve the tessellation of a complex surface of the Melbourne WestGate Role: Project Coordinator**, Funding (\$): 15000 Papers [J39] I provided new technology to **Taylor Thomson Whitting** (Australia) to design the panels of a 50 mt tall curved shell made of aluminium that will be the entrance of a new big tunnel (for automobiles) in Melbourne. My contribution included optimizing the panels conforming to the architect's plan while reducing the overall construction cost. I achieved this objective by leveraging one of the 3D-remeshing tools I developed.
- **2021 Hexahedral-dominant Auto-Mesh Generator Role: Chief Investigator** Funding (\$): 38000 **Hypercomp** (USA) uses the algorithm I presented at SIGGRAPH 2020 to create the data for mechanical and aerodynamic simulations.
- **2018 3D Graphics for Web Canon Information System Research**, Australia Sydney Course on real time rendering and Three.js (~12 hours 2 days) In this course I provided an overview all the main techniques for real-time rendering on the web 3D Scanning and Geometry Processing
- **2016 Canon Information System Research**, Australia Sydney Course on 3D scanning, geometry processing and shape analysis (~84 hours 14 days) In this course I provided an overview all the main techniques for geometry processing, remeshing and shape analysis with particular focus on applications such as fabrication and mesh reconstruction
- **2015 Geometry Processing Canon Information System Research**, Australia Sydney Course on geometry processing and exercise in C++ (~54 hours 9 days) In this course I provided an overview all the main functionalities of the VCG library and Meshlab
- **2012-2015 Exxon Mobile and Modelo Inc**, San Francisco Bay Area C++ development of cutting-edge geometry processing techniques tailored to geosciences applications.

Open Source Projects

- **MESHLAB:** MeshLab is an open source, portable, and extensible system for the processing and editing of unstructured 3D triangular meshes. Meshlab has become a de-facto standard in mesh processing with over 100000 active users, and 3 million downloads worldwide and it is largely used by the 3D printing community.

- **LIBIGL:** A simple C++ geometry processing library currently used by key industry and academia players, such as Pixar, Adobe Research, Epic Games, Google Research, Industrial Light and Magic and Microsoft Research.
- **VCG LIBRARY:** The Visualization and Computer Graphics Library (VCG for short) is a open source portable C++ templated library for manipulation, processing and displaying with OpenGL of triangle and tetrahedral meshes. VCG library is the backbone of Meshlab.
- **HEXALAB:** An online volumetric mesh visualizer integrating and shares the data of >30 different papers produced by multiple prestigious universities worldwide. It is becoming the standard tool in academia for volumetric mesh visualization

Data

28/05/2024

Luogo

Sydney


