

Marcel Padilla | Curriculum Vitae

Technical University of Berlin, Institute for Mathematics, Str. des 17. Juni 136
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Academic Positions

Doctoral researcher

Caltech, TU Berlin

Pasadena, US & Berlin, Germany

May 2018 – Current

Supervisors: Peter Schröder (Caltech) & Ulrich Pinkall (TU Berlin),
Scholarship (2018-2021). Employee at TU Berlin (2021-Current)

Student Assistant

TU Berlin

Berlin, Germany

Dec 2014 – Sep 2017

Code development and making [Tutorials](#) for the academic usage of the software Houdini.

Education

B.Sc & M.Sc. Mathematics

TU Berlin

Berlin, Germany

Oct 2016 – May 2018

Bilingual Abitur

Nelson Mandela International School Berlin

Berlin, Germany

Jul 2012

Awards and Association Memberships

Employee at TU Berlin

Discretization in Geometry and Dynamics,
Sonderforschungsbereich (SFB) Transregio 109

2021 - Current

Berlin Mathematical School and Math+

PhD Phase II student membership

2018 - Current

PhD scholarship

funded through a Einstein foundation visiting fellowship

2018 - 2021

German Academic Scholarship Foundation

Student scholarship, Studienstiftung des Deutschen Volkes, now alumni

2016 - 2018

German Mathematician Union (DMV)

Abitur Award, for excellent performances in mathematics

2012

Hans Riegel Foundation alumni

Award, for a mathematical submission as an Abitur exam

2012

Jugend Forscht

Young researchers competition award in Berlin

2011

Publications

- **NEW:** Marcel Padilla, Oliver Gross, Felix Knöppel, Albert Chern, Ulrich Pinkall, Peter Schröder (2022). *Filament Based Plasma*. ACM Transactions on Graphics, Vol. 41, No. 4, Art. 153
- **NEW:** Hamid Laga, Marcel Padilla, Ian H. Jermyn, Sebastian Kurtek, Mohammed Bannamoun, Anuj Srivastava (2022). *4D Atlas: Statistical Analysis of the Spatiotemporal Variability in Longitudinal 3D Shape Data*. IEEE Transactions on Pattern Analysis and Machine Intelligence.

- Marcel Padilla, Albert Chern, Felix Knöppel, Ulrich Pinkall, Peter Schröder (2019). *On Bubble Rings and Ink Chandeliers*. ACM Transactions on Graphics, Vol. 38, No. 4, Art. 129
- Marcel Padilla, Benedikt Kolbe, Aniruddha Chakraborty (2017). *The Nearest Hermitian Inverse Eigenvalue Problem Solution with Respect to the 2-Norm*. arXiv:1703.00829
- Heiko Herrmann, Marcel Padilla, and Emiliano Pastorelli (2014). *A.C.T.I.V.E.: A Scalable Superellipsoid-based CFD Visualization for Virtual and Desktop Environments*. EuroVR 2014, The Eurographics Association. 10.2312/eurovr.20141344
- Marcel Padilla (2012). *Eine Neue Visualisierung komplexer Funktionen*. Junge Wissenschaft issue Nr. 94

Conference Presentations

- *Filament Based Plasma*. ACM SIGGRAPH 2022. *Soon*.
- *Filament Based Plasma: Discrete Magnetohydrodynamics*. SFB Transregio 109 DGD days 2021 in Landshut.
- *On Bubble Rings and Ink Chandeliers*. 8th BMS student conference 2020.
- *On Bubble Rings and Ink Chandeliers*. ACM SIGGRAPH 2019. [View on Youtube](#).
- *Simulating Hurricanes on Bunnies, Point Vortex Dynamics on Closed Surfaces*. 7th BMS student conference 2019.
- *A.C.T.I.V.E. A Scalable Superellipsoid-based CFD Visualization for Virtual and Desktop Environments*. EuroVR 2014, The Eurographics Association.

Experiences

Visiting Research.....

California Institute of Technology **Pasadena, United States**
Department of Mathematics *Jul-Sep 2019*

Research visit. Supervisor: Peter Schröder

Leicester University **Leicester, United Kingdom**
Department of Mathematics *Jan 2019*

Implementing minimal and cmc surfaces. Supervisor: Katrin Leschke

King Abdullah University of Science and Technology **Thuwal, Saudi Arabia**
KAUST internship program *Feb 2018 – Apr 2018*

Wood fracture dynamics. Supervisor: Dominik L. Michels

Murdoch University **Perth, Australia**
DAAD rise worldwide scholarship *Aug 2016 – Oct 2016*

Machine learning on 4D shape analysis. Supervisor: Hamid Laga

Indian Institute of Technology Mandi **Mandi, India**
DAAD rise worldwide scholarship *Aug 2015 – Oct 2015*

Numerical methods for inverse eigenvalue problems. Supervisor: Aniruddha Chakraborty

Institute of Cybernetics **Tallinn, Estonia**
DAAD rise worldwide scholarship *Jul 2014 – Sep 2014*

Tensor field visualization in VR. Supervisor: Heiko Herrmann

Research.....

TU Berlin **Berlin, Germany**
Student assistant *Dec 2014 - Sep 2017*

Discretization in Geometry and Dynamics SFB Transregio 109

Teaching.....

The Art of Presenting **Berlin, Germany**
Workshop on presentations in academia at BMS/Math+, TU Berlin *Winter 2019 & 2020*

Geometry Processing and Applications <i>Tutorials and several lectures, TU Berlin</i>	Berlin, Germany <i>Winter 2019/2020</i>
Houdini Tutorials Tailored for Mathematicians <i>Online tutorials and course guide, TU Berlin</i>	Berlin, Germany <i>2016 - Current</i>
Mahtematik für Physiker I <i>Tutor classes, TU Berlin</i>	Berlin, Germany <i>Winter 2015/2016</i>
Teaching Assistant <i>Volunteer, Multicultural Youth and Integration Center mji e.V.</i>	Berlin, Germany <i>2012 – 2015</i>
Study Exchange	
Sophia Univeristy <i>Oversees exchange scholarship from the TU Berlin</i>	Tokyo, Japan <i>Sep 2017 – Feb 2018</i>
Durham Univeristy <i>Erasmus exchange scholarship from the EU</i>	Durham, United Kingdom <i>Sep 2013 – Jul 2014</i>

Technical and Personal Skills

Languages	
English: <i>excellent command</i>	
German: <i>native</i>	
Spanish: <i>native</i>	
French: <i>Intermediate</i>	
Japanese: <i>beginner</i>	
Arabic: <i>beginner</i>	
Programming Languages and Software	
Main computation tools: <i>Python, Houdini VEX, MATLAB</i>	
Experienced: <i>C++, java, javascript, html, css</i>	
Volunteering	
Foodsharing e.V. <i>Saving and distributing surplus food</i>	Berlin, Germany <i>2019 – current</i>
Arbeiter-Samariter-Bund <i>Kitchen staff, refugee emergency housing (Rathaus Wilmersdorf)</i>	Berlin, Germany <i>2015 – 2017</i>
St. John Ambulance Society <i>First aid response team</i>	Durham, UK <i>2013 – 2014</i>
Multicultural Youth and Integration Center mji e.V. <i>Volunteer, Homework helper</i>	Berlin, Germany <i>2012 – 2015</i>