

Education

SEPTEMBER 2017 - PRESENT	PhD candidate in mathematics , EPFL. Laboratory for Topology and Neuroscience	Lausanne (CH)
ADVISOR :	Prof. Kathryn Hess Bellwald	
RESEARCH TOPICS :	Topological Data Analysis, Machine Learning, Neural Networks, Life Science	
OCTOBER 2013 - JULY 2016	Master of Science in Mathematics , University of Padova.	Padova (IT)
JANUARY 2016 - JULY 2016	Undergraduate Research Thesis Project , University of Vienna. Geometric and Asymptotic Group Theory Research Group directed Prof. Arzhantseva	Vienna (AT)
SEPTEMBER 2010 - SEPTEMBER 2013	Bachelor of Science in Mathematics , University of Trento.	Trento (IT)

Experience

APRIL 2017 - AUGUST 2017	FBK Scientific Intern in the Laboratory of Neuroinformatics Topological Data Analysis applied to fMRI and MRI data	Trento (IT)
OCTOBER 2016 - DECEMBER 2016	IST Austria Scientific Intern Computational Topology Research Group directed by Prof. Edelsbrunner	Vienna (AT)

Published articles and preprints

- D. Egas Santander, S. Ebeli, A. Patania, N. Sanderson, F. Burtscher, K. Morrison, C. Curto, *Nerve theorems for fixed points of neural networks*, to appear in Research in Computational Topology 2, Springer, arXiv version, (2021).
- R. Belton, R. Brooks, S. Ebeli, L. Fajstrup, B. Terese Fasy, N. Sanderson, E. Vidaurre, *Combinatorial Conditions for Directed Collapsing*, to appear in Research in Computational Topology 2, Springer, arXiv version, (2021).
- S. Ebeli, M. Defferrard and G. Spreemann, *Simplicial Neural Networks*, in NeurIPS 2020 Workshop on Topological Data Analysis and Beyond, (2020).
- R. Belton, R. Brooks, S. Ebeli, L. Fajstrup, B. Terese Fasy, C. Ray, N. Sanderson, E. Vidaurre, *Towards Directed Collapsibility*, in Advances in Mathematical Sciences AWM, pp.255-271, (2020)
- S. Ebeli, G. Spreemann, *A Notion of Harmonic Clustering in Simplicial Complexes*, in Proceedings 18th IEEE International Conference on Machine Learning and Applications, (2019).

Synergistic Activities

- I am a member of the technical programme committee for the Topological Data Analysis and Its Application for Medical Data Workshop at MICCAI 2021.
- I am a co-organizer of the Theoretical Biology Network in Western Switzerland, where we organize seminars and outreaching events to build a community of researchers working in mathematical and theoretical biology in Western Switzerland.
- I co-organized the Young Topologist Meeting 2019, a conference to promote research and collaborations among PhDs and Postdocs in topology.
- I co-organized the Workshop on Topology and Neuroscience, a three days workshop to enhance research in the intersection of topology and neuroscience.
- I co-supervised four bachelor projects and one master project in applied topology at EPFL.

Invited Talks

AUGUST 2021	Beyond TDA-Persistent functions and its applications (moved online) Singapore (SG)
MAY 2021	SIAM Conference on Applications of Dynamical Systems, Network Dynamics and Higher-Order Interactions (moved online) Portland (USA)
APRIL 2021	IMSI, Topological Data Analysis (moved online) Chicago (USA)
SEPTEMBER 2020	TopoNets Workshop in NetSci Rome (IT)
FEBRUARY 2020	CIMAT Geometric and Topological Data Analysis Guanajuato (MX)
DECEMBER 2019	IEEE ICLMA 2019 Boca Raton, Florida (USA)
JULY 2018	Young Topologists Meeting 2018, University of Copenhagen Copenhagen (DK)

Programming Skills

Python Advanced : constantly used for data analysis and research.
C++ Basic : experience in student projects for Computer Science classes.
 Advanced knowledge of the most popular operating systems and Linux user.