

Anastasios Stefanou

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Education

- 2013–2018 **Ph.D**, *University at Albany, SUNY*.
Advisors: Elizabeth Munch, Justin Curry
- 2011–2013 **M.Sc**, *Aristotle University of Thessaloniki, Greece*.
Advisor: Theodora Theohari-Apostolidi
- 2005–2010 **B.Sc**, *Aristotle University of Thessaloniki, Greece*.

Research Interests

Applied Category Theory, Applied Algebraic Topology, Phylogenetic Networks.

Academic Appointments

- May–Oct 2021 **Visiting Assistant Professor**, *Dioscuri Centre for Topological Data Analysis, Institute of Mathematics of the Polish Academy of Sciences*.
Mentor: Pawel Dlotko
- 2020 -2021 **Senior Lecturer**, *Ohio State University*.
Mentor: Facundo Mémoli
- 2018-2020 **Post-Doctoral Scholar**, *joint appointment with Topological and Geometric Data Analysis group, and Mathematical Biosciences Institute at the Ohio State University*. *Webpage: <https://mbi.osu.edu/people/stefanou.3>*.
Mentor: Facundo Mémoli
- 2016–2018 **Lecturer**, *University at Albany*.
- Summer 2015 **Research Assistant**, *University at Albany*.
2016 & 2017
- 2013–2015 **Teaching Assistant**, *University at Albany*.

Publications

- 2021 M. Contessoto, F. Mémoli, A. Stefanou, L. Zhou, **The Persistent Cup-Length Invariant**, <https://arxiv.org/abs/2107.01553> (Preprint)
- 2021 F. Belchi-Guillamon, A. Stefanou, **A-infinity persistence estimates the topology from pointclouds**, <https://arxiv.org/abs/1902.09138> (In Press).
- 2020 W. Kim, F. Mémoli, A. Stefanou, **Interleaving by parts for persistence in a poset**, <https://arxiv.org/abs/1912.04366> (Preprint)

- 2020 A. Stefanou, **Tree decomposition of Reeb graphs, parametrized complexity, and applications to phylogenetics**, *Journal of Applied and Computational Topology*, 2020
- 2019 E. Munch, A. Stefanou, **The ℓ^∞ -cophenetic metric for phylogenetic trees as an interleaving metric**, *Research in Data Science*, 109127, AWMS, Springer, 2019.
- 2018 V. de Silva, E. Munch, A. Stefanou, **Theory of interleavings on categories with a flow**, *Theory and Applications of Categories*, 33(21):583607, 2018.

In Preparation

- 2020 F. Mémoli, A. Stefanou, **Metric geometry for categories with a flow**.
- 2020 T. Needham, A. Stefanou, **Stability of multiparameter barcodes with convex intervals**.

Extended Abstracts

- 2015 [Conference extended abstract] V. de Silva, E. Munch, A. Stefanou, **A Hom-tree lower bound for the Reeb graph interleaving distance**. Published in: *Extended Abstract, Fall Workshop on Computational Geometry, 2015*.

Thesis

- 2018 A. Stefanou, **Dynamics on Categories and Applications**, State University of New York at Albany, ProQuest Dissertations Publishing, 10845468, 2018.

Invited Talks

- Spring 2021 "Interleaving by Parts for Persistence in a Poset.", **Statistics and Data Analysis Seminar, University of Tennessee**, Knoxville, TN, April 8, 2021
- Spring 2021 "Interleaving by Parts for Persistence in a Poset.", **Applied Algebraic Topology Research Network, IMA, University of Minnesota**, January 12, 2021
- Spring 2020 "Algebraic and Metric Structure Theorems for Reeb Graphs and Formigrams.", **Topological Data Analysis meeting, University of Florida**, Gainesville, FL, January 30-31, 2020
- Fall 2019 "Partially ordered Reeb graphs, tree decompositions, and phylogenetic networks.", **Mathematical biology seminar, Georgia Tech**, Atlanta, GA, October 9, 2019
- Summer 2019 "Using Category Theory for Topological Data Analysis", **Ohio TDA Day, Air Force Lab**, Dayton, OH, July 29, 2019
- Fall 2018 "Interleavings on Phylogenetics Trees", **TGDA seminar, Ohio State University**, Columbus, OH, September 18, 2018
- Spring 2018 "Interleavings on categories with a flow", **GSIMS, Lehigh University**, Bethlehem, PA, March 8, 2018
- Spring 2018 "Interleavings on categories with a flow", **AMS Special Session in Topological Data Analysis, Joint Math Meetings**, San Diego, CA, January 13, 2018

- Summer 2017 "Interleavings on categories with lax $[0, \infty)$ -action", **Applied Algebraic Geometry-SIAM conference**, Atlanta GA, August 3, 2017
- Spring 2017 "Introduction to persistent homology", **Math Theory Seminar, US Military Academy, West Point**, NY, May 3, 2017
- Spring 2017 "Interleavings on categories with lax $[0, \infty)$ -action", **Algebra/Topology Seminar, University at Albany, SUNY**, March 23, 2017
- Spring 2017 "Interleavings on categories with lax $[0, \infty)$ -action and the hom-tree functor", **Joint Math Meetings**, Atlanta, Georgia, January 4, 2017
- Fall 2016 "Interleavings on categories with lax $[0, \infty)$ -action and the hom-tree functor", **Union College Mathematics Conference, Union College**, December 4, 2016
- Fall 2015 "A hom-tree lower bound for the Reeb graph interleaving distance", **Fall Workshop on Computational Geometry (FWCG)**, Buffalo, NY October 23, 2015

Contributed Talks

- Spring 2020 "Stratifying Multi-parameter Persistence", **Adjoint School-Applied Category Theory School, MIT**, Boston, MA, May 19, 2020
- Spring 2020 " A_∞ -persistence", **Network Data Analysis seminar, Ohio State University**, Columbus, OH, February 6, 2020
- Fall 2019 "Partially ordered Reeb graphs, tree decompositions, and phylogenetic networks", **AMS Contributed Papers Session 1**, University of California, Riverside, CA, November 9, 2019
- Fall 2019 "Partially ordered Reeb graphs, tree decompositions, and phylogenetic networks", **MBI seminar, Ohio State University**, Columbus, OH, September 24, 2019
- Summer 2019 "Magnitude of metric spaces and magnitude homology (Part 3)", **Network Data Analysis seminar, Ohio State University**, Columbus, OH, August 15, 2019
- Summer 2019 "Magnitude of metric spaces and magnitude homology (Part 2)", **Network Data Analysis seminar, Ohio State University**, Columbus, OH, August 1, 2019
- Summer 2019 "Magnitude of metric spaces and magnitude homology (Part 1)", **Network Data Analysis seminar, Ohio State University**, Columbus, OH, July 24, 2019
- Spring 2019 "Applied Topology for Phylogenetic Networks", **TAGGS seminar, Ohio State University**, Columbus, OH, April 19, 2019
- Spring 2019 "Applied Topology for Phylogenetic Networks", **Post-Doc Welcome seminar, Ohio State University**, Columbus, OH, April 18, 2019
- Spring 2019 "Computation of the interleaving distance between multidimensional persistence (Part 2)", **Network Data Analysis seminar, Ohio State University**, Columbus, OH, April 4, 2019
- Spring 2019 "Computation of the interleaving distance between multidimensional persistence (Part 1)", **Network Data Analysis seminar, Ohio State University**, Columbus, OH, February 28, 2019

- Spring 2019 "Applied Topology for Phylogenetic Networks", **MBI seminar, Ohio State University**, Columbus, OH, February 19, 2019
- Spring 2019 "Introduction to Persistent Homology", **MBI seminar, Ohio State University**, Columbus, OH, February 7, 2019

Awards and Research Support

- Spring 2021 **Honorarium.**
The award was used to present a research talk at the Statistics and Data Analysis Seminar at University of Tennessee at Knoxville.
- Spring 2020 **Travel award.**
The award was used to attend the Topological Data Analysis meeting at University of Florida.
- Fall 2019 **Travel award.**
The award was used to attend the Mathematical Biology seminar at Georgia Tech University.
- Spring 2018 **Travel award.**
The award was used to attend the GSIMS seminar at Lehigh University.
- Spring 2018 **AMS travel award.**
The award was used to attend the Joint Math Meetings in San Diego, California.
- Summer 2017 **SIAM travel award.**
The award was used to attend the SIAM-AG17 conference in Atlanta, Georgia.
- Fall 2016 **Discretionary Salary Award,** .
Mathematics Department, SUNY at Albany.
- Summer 2016 **Travel award,** .
The award was used to attend the ATMCS7 conference in Torino, Italy.
- Spring 2016 **NSF travel award,** .
The award was used to attend the TGDA conference in Columbus, Ohio.
- Fall 2015 **NSF travel award.**
The award was used to attend the FWCG workshop in Buffalo, NY.
- Summer 2015 **NSF travel award.**
The award was used to attend the YRF and SoCG conference in Eindhoven, Netherlands.

Teaching

- Spring 2021 Math 1152: Calculus 2 (two sections), Ohio State University
- Fall 2020 Math 5702: Curves and Surfaces in Euclidean Three Space, Ohio State University
- Spring 2020 Math 4570: Applied Algebraic Topology, Ohio State University
- Summer 2018 Math 113: Calculus II, SUNY Albany
- Spring 2018 Math 101: Algebra and Calculus I (two sections), SUNY Albany
- Fall 2017 Math 101: Algebra and Calculus I (two sections), SUNY Albany
- Spring 2017 Math 111: Algebra and Calculus II (two sections), SUNY Albany
- Fall 2016 Math 112: Calculus I (two sections), SUNY Albany
- Fall 2015 Math 101: Algebra and Calculus I, SUNY Albany

Spring 2015 Math 111: Algebra and Calculus II, SUNY Albany

Fall 2014 Math 101: Algebra and Calculus I, SUNY Albany

Service

Fall 2020- Reviewer of *Mathematical Reviews/MathSciNet Reviews*.

Spring 2020- Co-Advisor of a PhD student.

Fall 2019 Chair of the Contributed Paper Session (CP 1) of AMS Western Sectional Meeting, University of California, Riverside.

Fall 2019 Coordinator of Professional Development seminar, at Mathematical Biosciences Institute (MBI).

Summer 2019 Mentor of undergraduate students in the Summer 2019 REU program at MBI.

Spring 2019 Sub-reviewer at 34th Symposium on Computational Geometry.

Computer Skills

Coding **Python, MATLAB, Mathematica, LaTeX, HTML.**

Professional Affiliations

American Mathematical Society (AMS)