

# Julian Asilis

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U.S. citizen

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## Education

- Aug 2022 – **Ph.D. in Computer Science**, UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles  
May 2027 Supported by [NSF Graduate Research Fellowship](#), 2024–present  
(Expected) *Research interests*: Statistical learning theory; deep learning theory; deep generative models.  
*Advisor*: Vatsal Sharan  
GPA: 4.0
- 2016 – 2020 **A.B. in Mathematics with High Honors**, HARVARD UNIVERSITY, Cambridge, MA  
*Senior Thesis*: [Probability Monads](#), under Michael Hopkins.

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## Research

Authors are ordered alphabetically throughout, as is standard in computer science theory.

**Understanding Aggregations of Proper Learners in Multiclass Classification**  
[Julian Asilis](#), Mikael Møller Høgsgaard, Grigoris Velegkas.  
Submitted, October 2024.

**Proper Learnability and the Role of Unlabeled Data**  
[Julian Asilis](#), Siddhartha Devic, Shaddin Dughmi, Vatsal Sharan, and Shang-Hua Teng.  
Submitted, October 2024.

**Transductive Sample Complexities Are Compact**  
[Julian Asilis](#), Siddhartha Devic, Shaddin Dughmi, Vatsal Sharan, and Shang-Hua Teng.  
In *Neural Information Processing Systems (NeurIPS)*, 2024.

**Open Problem: Can Local Regularization Learn All Multiclass Problems?**  
[Julian Asilis](#), Siddhartha Devic, Shaddin Dughmi, Vatsal Sharan, and Shang-Hua Teng.  
In *Conference on Learning Theory (COLT)*, 2024. (Open problems track)

**Regularization and Optimal Multiclass Learning**  
[Julian Asilis](#), Siddhartha Devic, Shaddin Dughmi, Vatsal Sharan, and Shang-Hua Teng.  
In *Conference on Learning Theory (COLT)*, 2024.

**Computable PAC Learning of Continuous Features**  
Nathanael Ackerman, [Julian Asilis](#), Jieqi Di, Cameron Freer, and Jean-Baptiste Tristan.  
In *Logic in Computer Science (LICS)*, 2022.

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## Experience

- June 2021 – **Research Associate**, BOSTON COLLEGE, Chestnut Hill, MA  
June 2022
- Researched computable learning theory, contributing to the publication and presentation of an extended abstract at CCA and a paper at LICS.
  - Researched topological measures of complexity for neural networks, including training and analyzing 10k+ nets, and designing and implementing an efficient algorithm for computing polyhedral decompositions of shallow nets.
  - Served as TA and Head TA for 2 computer science courses, including writing 140 pages of notes, overseeing 7 TA's, and writing scripts for automated exam grading.

- July 2020 – **Quantitative Researcher**, *AQR CAPITAL MANAGEMENT*, Greenwich, CT  
May 2021
  - Refined and expanded several factors used to trade dozens of assets in fixed income.
  - Performed statistical inference and time series modeling on datasets of 1M+ entries.
  - Delivered multiple 60-minute research presentations to senior quants and partners.
  - Wrote production code in Python and SQL.
- Summer 2019 **Research Summer Analyst**, *AQR CAPITAL MANAGEMENT*, Greenwich, CT
  - Completed 10-week research project studying macroeconomic signals for the fixed income group, including extensive signal testing in Python.
  - Delivered findings to partners through a 60-minute presentation.

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## Teaching

At Boston College:

- *CSCI 1101: Computer Science I* (Spring 2022 Head Teaching Assistant)
- *CSCI 3340: Introduction to Machine Learning with Applications to Chemistry* (Fall 2021 Teaching Assistant)

At Harvard:

- *Math 101: Sets, Groups, and Topology* (Spring 2020 Course Assistant)
- *Math 112: Real Analysis I* (Spring 2019 Course Assistant)
- *Math 122: Abstract Algebra I* (Fall 2018 Course Assistant)

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## Community

- Summer 2023 **SHINE Mentor**, *USC Summer High School Intensive in Next Generation Engineering (SHINE)*, Los Angeles, CA
- 2019 – 2020 **Math Mentor**, *Harvard Gender Inclusivity in Mathematics (GIIM)*, Cambridge, MA
- 2018 – 2019 **Teaching Assistant**, *Cambridge Math Circle*, Cambridge, MA

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## Skills

**Programming:** Python

**Languages:** English, Spanish