

# Jacopo Teneggi

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## EDUCATION

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### Johns Hopkins University

PhD in Computer Science

Baltimore, MD

2022—present

- Advisor: Prof. Jeremias Sulam
- Relevant coursework: (EN.601.674) ML: Learning Theory, (EN.553.730) Statistical Theory, (EN.553.740) Machine Learning I, (EN.601.682) ML: Deep Learning, (EN.580.709) Sparse Representations in CV and ML, (EN.553.739) High-Dimensional Probability, (EN.601.633) Intro Algorithms.

MSE in Biomedical Engineering

2020—2022

- Concentration: Biomedical Data Science
- GPA: 3.93/4.00
- Master's Thesis: "*Multiple-Instance Learning as a Framework to Explain via the Shapley Value*"  
Committee: Prof. Jeremias Sulam (Advisor), Prof. Soledad Villar, Prof. Adam Charles

### Politecnico di Torino

BS in Biomedical Engineering

Torino, Italy

2017—2020

- GPA: 3.93/4.00

## PUBLICATIONS

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1. [Teneggi, J.](#), [Yi, P.H.](#), [Sulam, J.](#), 2023. Examination-level Supervision for Deep Learning-Based Intracranial Hemorrhage Detection on Head CT. *Radiology: Artificial Intelligence*.
2. [Teneggi, J.\\*](#), [Bharti, B.\\*](#), [Romano, Y.](#) and [Sulam, J.](#), 2023. SHAP-XRT: The Shapley Value Meets Conditional Independence Testing. *Transactions on Machine Learning Research*.
3. [Teneggi, J.](#), [Tivnan, M.](#), [Stayman, J.W.](#) and [Sulam, J.](#), 2023. How to Trust Your Diffusion Model: A Convex Optimization Approach to Conformal Risk Control. *ICML*.
4. [Teneggi, J.](#), [Luster, A.](#), and [Sulam, J.](#), 2022. Fast Hierarchical Games for Image Explanations. *IEEE Transactions on Pattern Analysis and Machine Intelligence*. **Best Paper Award at IMLH, ICML 2021**.
5. [Athey, T.L.](#), [Teneggi, J.](#), [Vogelstein, J.T.](#), [Tward, D.J.](#), [Mueller, U.](#) and [Miller, M.I.](#), 2021. Fitting splines to axonal arbors quantifies relationship between branch order and geometry. *Frontiers in Neuroinformatics*.
6. [Teneggi, J.](#), [Chen, X.](#), [Balu, A.](#), [Barrett, C.](#), [Grisolia, G.](#), [Lucia, U.](#) and [Dzakpasu, R.](#), 2021. Entropy estimation within in vitro neural-astrocyte networks as a measure of development instability. *Physical Review E*, 103(4), p.042412.

## TEACHING EXPERIENCE

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Teaching assistant, (*EN.580.464*) *Advanced Data Science for Biomedical Engineering*

Spring 2023

Instructors: Prof. Jeremias Sulam

Teaching assistant, (*EN.500.115*) *Gateway Data Science*

Spring 2022

Instructors: Prof. Fadil Santosa, Prof. Jeremias Sulam

Teaching assistant, (*EN.553.285*) *Intro to Scientific Computing in Python*

Intercession 2022

Instructors: Philip Kerger

Co-Instructor, *INMAS Python Workshop*

Fall 2021

Instructors: Philip Kerger

## SERVICE

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- Reviewer for TMLR
- Reviewer for NeurIPS workshops: XAIA, DGM4H
- Reviewer for DeepMath

## INDUSTRY EXPERIENCE

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<b>Profluent</b> , ML Scientist Intern	June 2023 - September 2023
<b>nference, Inc.</b> , Data Scientist Intern	June 2021 - September 2021
Distributed pretraining of large language models on biomedical corpora	

## ENTREPRENEURSHIP

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<b>European Innovation Academy</b> , Torino, Italy	2019
Developed a gut microbiome company idea to improve maternal health.	
<b>Junior Enterprise Torino Politecnico (JEToP)</b> , Torino, Italy	2017-2020
Lead an 100+ people organization as Vice President.	

## AWARDS AND FELLOWSHIPS

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• Mathematical Institute for Data Science (MINDS) summer fellowship	2023
• RSNA Trainee Research Prize in imaging informatics	2022
• Best Paper Award, Workshop in Interpretable Machine Learning in Healthcare (IMLH) @ ICML	2021
• IEEE HKN Mu Nu Chapter Inductee	2019
• Politecnico di Torino <i>Young Talents</i> scholarship (full-ride, top 200 applicants)	2017

## MEDIA COVERAGE

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• Johns Hopkins Department of Computer Science	<a href="#">[article]</a>
• Microsoft Research Project InnerEye blog	<a href="#">[article]</a>
• Radiology: Artificial Intelligence Podcasts	<a href="#">[part1]</a> <a href="#">[part2]</a>

## TALKS AND POSTERS

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• Radiological Society of North America (RSNA) Annual Meeting [poster] <i>K-RCPS: Uncertainty Quantification for Diffusion Models via Conformal Prediction and Conformal Risk Control in CT Denoising</i>	2023
• International Seminar on Distribution-Free Statistics [talk] <i>How to Trust Your Diffusion Model: A Convex Optimization Approach to Conformal Risk Control</i>	2023
• AI-X Foundry Fall Symposium [poster] <i>How to Trust Your Diffusion Model: A Convex Optimization Approach to Conformal Risk Control</i>	2023
• (EN.540.405) Modern Data Analysis and Machine Learning for ChemBEs [talk] <i>Explainable ML: A Brief Overview with Practical Examples</i>	2023
• Bern Interpretable AI Symposium [talk] <i>h-Shap: Fast Hierarchical Games for Image Explanations</i>	2023
• 57th Conference on Information Sciences and Systems [talk] <i>Uncertainty Quantification in CT Denoising</i>	2023

- QMUL Intelligent Sensing Winter School [talk]  
*h-Shap: Fast Hierarchical Games for Image Explanations* 2022
- Radiological Society of North America (RSNA) Annual Meeting [talk]  
*Weakly-Supervised Learning Substantially Reduces the Number of Labels Required for Intracranial Hemorrhage Detection on Head CT* 2022
- SIIM Conference of Machine Learning in Medical Imaging [talk]  
*Multiple-Instance Learning Substantially Reduces the Number of Labels Required for Intracranial Hemorrhage Detection on Head CT* 2022
- SIAM Conference on Mathematics of Data Science [talk]  
*Interpreting ML Models with Shapley Values* 2022
- Princeton Machine Learning Theory Summer School [poster]  
*Fast Hierarchical Games for Image Explanations* 2022
- ICML 2021 Workshop in Interpretable Machine Learning in Healthcare [talk]  
*Fast Hierarchical Games for Image Explanations* 2021