Jacopo Teneggi

Baltimore, MD, 21211

(646) 575-9400 · jtenegg1@jhu.edu · https://jacopoteneggi.github.io · linkedin · scholar

EDUCATION

Johns Hopkins University — Baltimore, MD

PhD in Computer Science — 2022—2027

- 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 — Torino, Italy

BS in Biomedical Engineering — 2017—2020

- GPA: 3.93/4.00 .

PUBLICATIONS

1. Teneggi, J., Sulam, J., 2024. I Bet You Did Not Mean That: Testing Semantic Importance via Betting. arXiv preprint:2405.19146.
2. Teneggi, J., Yi, P.H., Sulam, J., 2023. Examination-level Supervision for Deep Learning-Based Intracranial Hemorrhage Detection on Head CT. Radiology: Artificial Intelligence. **Cover feature.**
3. Teneggi, J.*, Bharti, B.*, Romano, Y. and Sulam, J., 2023. SHAP-XRT: The Shapley Value Meets Conditional Independence Testing. Transactions on Machine Learning Research.
4. 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.
5. 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.**
6. 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.
7. 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 AND MENTORSHIP EXPERIENCE

Mentor, Whiting Internships in Science and Engineering (WISE) — Spring 2024

WISE provides research learning opportunities for Baltimore City public high school students.

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: Phillip Kerger.

Co-Instructor, *INMAS Python Workshop* Fall 2021
Instructors: Phillip Kerger.

SERVICE

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

INDUSTRY EXPERIENCE

Profluent, ML Scientist Intern June 2023 - September 2023

Parameter efficient fine-tuning of LLMs for guided protein generation.

nference, Inc., Data Scientist Intern June 2021 - September 2021

Distributed pretraining of LLMs on biomedical corpora.

ENTREPRENEURSHIP

European Innovation Academy, Torino, Italy 2019

Developed a gut microbiome company idea to improve maternal health.

Junior Enterprise Torino Politecnico (JEToP), Torino, Italy 2017-2020

Lead an 100+ people organization as Vice President.

AWARDS AND FELLOWSHIPS

- Mathematical Institute for Data Science (MINDS) summer fellowship. 2024
- 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 *Young Talents* scholarship (full-ride, top 200 applicants). 2017

MEDIA COVERAGE

- Johns Hopkins Department of Computer Science. [article]
- Microsoft Research Project InnerEye blog. [article]
- Radiology: Artificial Intelligence Podcasts. [part1] [part2]

TALKS AND POSTERS

- SIAM Conference on Uncertainty Quantification [poster]
  How to Trust Your Diffusion Model: A Convex Optimization Approach to Conformal Risk Control 2024
- SPIE Photonics West Meeting [keynote]
  How to Trust Your Diffusion Model 2024

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