Erasmo Tani

ABOUT ME

Sono un assegnista di ricerca presso il Dipartimento di Informatica della Sapienza Università di Roma (Codice AR-B 19/2024)

EDUCATION AND TRAINING

PhD Computer Science
University of Chicago [2019 – 2024]

City: Chicago | **Country:** United States | **Website:** www.uchicago.edu

MSci Computer Science
Boston University [2017 – 2019]

City: Boston | **Country:** United States | **Website:** www.bu.edu

MEng Computer Science
University of Bristol [2013 – 2017]

City: Bristol | **Country:** United Kingdom | **Website:** https://www.bristol.ac.uk/

WORK EXPERIENCE

Assegnista di Ricerca
Sapienza Università di Roma [01/2025 – Current]

City: Roma | **Country:** Italy

Research Intern
Toyota Technlogical Institute [10/2024 – 12/2024]

City: Chicao | **Country:** United States

Research Intern
University of Illinois [07/2024 – 09/2024]

City: Chicago | **Country:** United States

Developed new algorithms for query learning of random hypergraphs.

Graduate Researcher and Teaching Assistant
University of Chicago [2019 – 2024]

City: Chicago | **Country:** United States

- Conducted research in algorithms, with a focus on generalizing spectral graph theory techniques to the domain of hypergraphs, resulted in several research papers,
- Lead an all-student research project on clustering by active learning that resulted in a paper currently in submission,
- Designed new clustering algorithms with formal guarantees in graphs and on finite sets,
- Aided in the teaching of 6 graduate and undergraduate classes in topics including data structures and algorithms, data analytics, and computational geometry.

Research Intern
Toyota Technological Institute of Chicago [07/2023 – 09/2023]

City: Chicago | **Country:** United States

- Developed and implemented cutting-edge algorithms for searching in graphs with ML advice,
- Established optimality of the algorithms by proving mathematical guarantees. My work was awarded the Outstanding Student Paper Highlight award at AISTATS 24.

Research Intern and Teaching Assistant

University of Bristol [2013 – 2017]

City: Bristol | **Country:** United Kingdom

- Worked on the implementation of algorithms for sparsification of graphs using spectral (numerical) techniques,
- Ran experiments in Python to test algorithms.
- Worked on secure multi-party computation (MPC): studied the MPC literature and implemented a novel secure multi-party computation protocol in C++.
- Aided in the teaching of 7 undergraduate classes with topics including programming, algorithms, combinatorics, group theory and theory of computation (formal languages and complexity).

TEACHING EXPERIENCE

[2020 – 2024]
Teaching Assistant - Theory of Algorithms | The University of Chicago

Worked on tutoring the students, designing teaching materials and grading assignment for five iterations of the introductory algorithms class at the University of Chicago.

[10/2023 – 12/2023]
Teaching Assistant - Advanced Data Analytics | The University of Chicago

Worked on aiding with teaching as well as designing and grading assignments for a Master's level class at the University of Chicago,

[03/2023 – 05/2023]
Teaching Assistant - Computational and Metric Geometry | Toyota Technological Institute at Chicago

Assisted student learning (by e.g. running office hours) and graded assignments for a graduate level class at TTIC.

[01/2019 – 08/2019]
Teaching Fellow - Probability in Computing | Boston University

Assisted student learning, designed and graded assignments for a first undergraduate class in probability for the computer science major students at Boston University.

[2018 – 2018]
Teaching Assistant - Advanced Optimization Algorithms | Boston University

Assisted student learning and graded assignment for a graduate class on optimization algorithms at Boston University.

[2016 – 2017]
Tutor - Theory of Computation | The University of Bristol

Assisted student learning by running weekly office hours and graded exams for two iterations of a first class in theoretical computer science at the University of Bristol.

[09/2016 – 12/2016]
Teaching assistant - Group Theory 3 | The University of Bristol

Assisted student learning by running problem classes for a second class in undergraduate group theory at the University of Bristol.

[2016 – 2016]
Teaching Assistant - Combinatorics 2 | The University of Bristol

Assisted student learning by running weekly problem classes for a first class in undergraduate combinatorics at the University of Bristol.

[2014 – 2014]
Teaching Assistant - Programming and Algorithms I | The University of Bristol

Assisted student learning in the computer labs for two iterations of the introductory undergraduate programming class at the University of Bristol.

[2015 – 2015]
Teaching Assistant - Programming and Algorithms II | The University of Bristol

Assisted student learning in the computer labs for the second class in the programming sequence at the University of Bristol.

PUBLICATIONS

[2024]
Optimal Algorithms for Learning Partitions with Faulty Oracles

[2024]
Fast Algorithms for Hypergraph PageRank with Applications to Semi-Supervised Learning

[2024]

Approximation Algorithms for ℓp-Shortest Path and ℓp-Group Steiner Tree

[2024]
Learning-Based Algorithms for Graph Searching Problems

HONOURS AND AWARDS

[05/2024]
AISTATS Outstanding Student Paper Highlight Award
Received prize awarded to 7 papers out of 547 papers with student authors submitted to AISTATS 2024.

[2017] Boston University
Dean's Fellowship
Awarded non-service fellowship to pursue graduate studies at Boston University

[2017] University of Bristol
Top Computer Science and Mathematics Student
Awarded a prize by the University of Bristol for graduating with the single highest average score (GPA) in my cohort

[2016] University of Bristol
Bloomberg Prize: Top Penultimate Year Student in Computer Science
Achieved the single highest average grade out of all (43) third year students in my program at the University of Bristol

[2016] University of Bristol
Faculty of Engineering Prize Studentship
Only student in my cohort at the University of Bristol who was awarded funds to undertake a summer research project.

[2015] University of Bristol
Netcraft Prize: Top Second Year Student in Computer Science
Achieved the single highest average grade out of all (125) second year CS students at the University of Bristol

DIGITAL SKILLS

Programming

Python / Python, Scikit-Learn, Numpy, Matplotlib / Matlab / C / Java / Julia / R / C++

Machine Learning

Supervised Learning / SVM (Support Vector Machines) / k-NN / Neural Networks / Clustering

LANGUAGE SKILLS

Mother tongue(s): Italian

Other language(s):

English

LISTENING C2 **READING** C2 **WRITING** C2
SPOKEN PRODUCTION C2 **SPOKEN INTERACTION** C2

French

LISTENING A2 **READING** A2 **WRITING** A2
SPOKEN PRODUCTION A2 **SPOKEN INTERACTION** A2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user