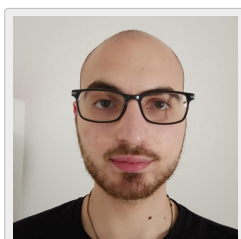


ROBERTO BRUNO

Curriculum Vitae - 10th April 2024

PERSONAL INFORMATION



Name: Roberto Bruno

Date of Birth: 25th March 1998

Address: Via Contrada Valloni, 5,
83043 Bagnoli Irpino (AV), Italy

Phone: +39 345 85 67 214

E-Mail: roberto250398@gmail.com

Institutional E-Mail:

rbruno@unisa.it

GitHub Profile: @Rob11001

LinkedIn Profile:

robertobruno11001

ORCID: 0000-0001-6039-2075

EDUCATION

University of Salerno

PhD student in Computer Science

Supervisor: *Prof. Ugo Vaccaro*

Research Area: Information Theory and its application

Fisciano, SA

2022 - currently

University of Salerno

Master's degree in Computer Science

Thesis: Application of Information Theory functionals to dimension reduction of probability distributions

Grade 110/110 cum laude

Academic advisor: *Prof. Ugo Vaccaro*

Fisciano, SA

2020 - 2022

University of Salerno

Bachelor's degree in Computer Science

Thesis: Exact Exponential Algorithms

Grade 110/110 cum laude

Academic advisor: *Prof. Ugo Vaccaro*

Fisciano, SA

2017 - 2020

RESEARCH ACTIVITY AND WORK EXPERIENCE

PhD student at University of Salerno

Main research topics: Information Theory and Algorithms.

Academic advisor: Prof. Ugo Vaccaro

November 2022 - currently

PUBLICATIONS

Paper: *A note on equivalent conditions for majorization*

Authors: Roberto Bruno, Ugo Vaccaro;

Journal: AIMS Mathematics;

DOI: [10.3934/math.2024419](https://doi.org/10.3934/math.2024419)

Paper: *Bounds and Algorithms for Alphabetic Codes and Binary Search Trees*

Authors: Roberto Bruno, Roberto De Prisco, Alfredo De Santis, Ugo Vaccaro;

Current State: **Submitted**;

Journal: IEEE Transactions on Information Theory.

Paper: *Entropic Bounds on the Average Length of Codes with a Space*

Authors: Roberto Bruno, Ugo Vaccaro;

Journal: Entropy MDPI;

DOI: [10.3390/e26040283](https://doi.org/10.3390/e26040283)

PERSONAL SKILLS

Organisational / Managerial Skills

Management and Scheduling Thanks to the PhD work activities and the exams carried out, I could improve my ability to organize work to meet deadlines. Both in preparation for exams and in work, I have shown good ability organization, always accomplishing the assigned tasks as well as possible. Especially during PhD research activity.

Communication Skills

Communication During my studies and research activity, I've had the opportunity to develop good communication and interpersonal skills. Participating in international summer schools also allowed me to work on my interpersonal skills enhancing my ability to interact with others and to work as part of a team.

Job related Skills

| | | | |
|------------|-----------|--------|-----------|
| C/C++ | ● ● ● ● ● | Java | ● ● ● ● ● |
| JavaScript | ● ● ● ● ● | MATLAB | ● ● ● ● ● |
| SQL | ● ● ● ● ● | Python | ● ● ● ● ● |

Programming Models: SYCL, CUDA, OpenMP, MPI.

Technologies: Relational Databases, NoSQL Databases (MongoDB), Docker, Git.

Interests: Information Theory, Algorithms and Data structures, Game Theory, Artificial Intelligence.

Master's degree courses:

Information Theory: Basic concepts of Information Theory; Data compression; Data security.

Optimization methods: Linear and integer programming techniques.

Advanced algorithms: Exact algorithms; Approximated algorithms; Randomised algorithms; Online and distributed algorithms.

Distributed architectures: P2P protocols; Distributed networks; Leader election and consensus problem on distributed systems.

OTHER INFORMATION

Languages

Italian
Mother tongue

English
Listening – B2
Reading – C1
Spoken interaction – B2
Spoken production – B2
Writing – C1

Università degli Studi di Salerno
Centro Linguistico di Ateneo
June 2021

ACADEMIC PROJECTS

SYCL Performance Portability

Project realized for High-Performance Computing Master course, based on a performance portability study on AMD CPU and NVIDIA GPU of different types of matrix multiplication implementations using SYCL.

Auction Mechanism

Project realized for a Master course. It is based on the design and development in Java of an auction mechanism based on a P2P Network using TomP2P library.

Toy compiler

My colleagues and I developed a source-to-source toy compiler addressing the stages of compiler development from lexical analysis to intermediate code generation.

MyTutor

MyTutor was developed for the Software Engineering course to digitalize and speed up the procedure for requesting the Help Teaching activities at the Computer Science Department of the University of Salerno.

PRIVACY TREATMENT & SIGNATURE

I give consent to process my data with the purpose of the recruitment process, in accordance to the Regulation of the European Parliament 679/2016, regarding the protection of natural persons and free movement of such data.

Fisciano, 10/04/2024
Signature

