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1. Education & Experience

1.1. EDUCATION

Ph.D. in Computer Science

UNIVERSITY OF PISA / CNR-ISTI

Pisa, Italy

11/2021 – now

- **Thesis:** “Data-aware application Placement And Management in the Cloud-IoT continuum”
- **Advisors:** Antonio Brogi, Stefano Forti, Patrizio Dazzi

M.Sc. in Computer Science - “ICT Solutions Architect”

UNIVERSITY OF PISA

Pisa, Italy

10/2019 – 10/2021

- **Thesis:** “Data-aware application Placement And Routing in the Cloud-IoT”
- **Advisors:** Antonio Brogi, Stefano Forti
- **Degree Mark:** 110/110 with honors
- **Date of Achievement:** 08/10/2021

B.Sc. in Computer Science

UNIVERSITY OF PISA

Pisa, Italy

09/2016 – 10/2019

- **Thesis:** “Voice and graphical user interface for a smart building application”
- **Advisors:** Antonio Brogi, Stefano Forti
- **Degree Mark:** 106/110
- **Date of Achievement:** 04/10/2019

High School Diploma in Computer Science

ISTITUTO TECNICO “LUIGI DI MAGGIO”

San Giovanni Rotondo, Italy

09/2011 – 07/2016

- **Final Mark:** 100/100 with honors
- **Date of Achievement:** 15/07/2016

1.2. OTHER EDUCATIONAL EXPERIENCES

Lipari Summer School on Computational Complex and Social Systems

UNIVERSITY OF CATANIA

Lipari, Italy

16/07/2023 – 22/07/2023

(40h) Ph.D. summer school, the 2023 edition aimed to provide opportunities for gaining experience in modern data analysis, particularly in the realm of Big Data analytics. This encompassed subjects related to mining data in the Internet of Things. Distinguished guest lecturers and recognized authorities in the field addressed these topics with a focus on algorithms, computational models, and practical results.

1.3. ACADEMIC POSITIONS

Scholarship holder

UNIVERSITY OF PISA / CNR-ISTI

Pisa, Italy

11/2021 – now

Holder of the scholarship “Efficient solutions and approaches for AI on Edge Computing platforms”, associated with participation in the Ph.D. programme in Computer Science, funded by CNR-ISTI “A. Faedo”.

2. Academic Activities

2.1. SCIENTIFIC PUBLICATIONS

CONFERENCE PAPERS

- [C1] **J. Massa**, S. Forti, F. Paganelli, P. Dazzi, and A. Brogi, “Towards declarative intent processing and conflict resolution in IBN”, in *Proceedings of the IEEE/ACM 16th International Conference on Utility and Cloud Computing*, ACM, 2024.
DOI: 10.1145/3603166.3632236,
Quality (GGS): N.A.
- [C2] T. Di Riccio, **J. Massa**, S. Forti, and A. Brogi, “Sustainable placement of VNF chains in Intent-based Networking”, in *Proceedings of the IEEE/ACM 16th International Conference on Utility and Cloud Computing*, ACM, Apr. 2024.
DOI: 10.1145/3603166.3632167,
Quality (GGS): N.A.
- [C3] **J. Massa**, S. Forti, P. Dazzi, and A. Brogi, “Declarative and Linear Programming Approaches to Service Placement, Reconciled”, in *2023 IEEE 16th International Conference on Cloud Computing (CLOUD)*, Sep. 2023, pp. 1–10.
DOI: 10.1109/CLOUD60044.2023.00033,
Quality (GGS): A-.
- [C4] **J. Massa**, S. Forti, and A. Brogi, “Data-Aware Service Placement in the Cloud-IoT Continuum”, in *Service-Oriented Computing*, Springer International Publishing, Jun. 2022, pp. 139–158.
DOI: 10.1007/978-3-031-18304-1_8,
Quality (GGS): N.A.

WORKSHOP PAPERS

- [W1] **J. Massa**, S. Forti, F. Paganelli, P. Dazzi, and A. Brogi, “Declarative Provisioning of Virtual Network Function Chains in Intent-based Networks”, in *2023 IEEE 9th International Conference on Network Softwarization (NetSoft)*, Jul. 2023, pp. 522–527.
DOI: 10.1109/NetSoft57336.2023.10175449,
Quality (GGS): N.A.
- [W2] **J. Massa**, “Data-Aware Application Placement and Management in the Cloud-IoT Continuum”, in *Service-Oriented Computing – ICSOC 2022 Workshops*, Springer Nature Switzerland, Mar. 2023, pp. 301–307.
DOI: 10.1007/978-3-031-26507-5_24,
Quality (GGS): A-.

MICELLANEOUS

- [M1] **J. Massa**, S. Forti, P. Dazzi, and A. Brogi, “Data-Aware Declarative Application Management in the Cloud-IoT Continuum”, *ERCIM News*, no. 133, Jun. 2023.
URL: <https://ercim-news.ercim.eu/en133/special/data-aware-declarative-application-management-in-the-cloud-iot-continuum>.

THESES

- [T1] **J. Massa**, “Data-aware application placement and routing in the Cloud-IoT continuum”, M.Sc. Thesis, Dept. of Computer Science, University of Pisa, Oct. 2021.
URL: <https://etd.adm.unipi.it/theses/available/etd-09072021-120248/>.
- [T2] **J. Massa**, “Voice and graphical user interface for a smart building application”, B.Sc. Thesis, Dept. of Computer Science, University of Pisa, Oct. 2019.

2.2. SCIENTIFIC CONFERENCES ORGANISATION

Participation in the following international scientific conference committees:

Web Chair

- **HPDC 2024**, 33rd International Symposium on High-Performance Parallel and Distributed Computing

Program committee member

- **ACR 2025**, 3rd International Conference on Advances in Computing Research
- **IEEE SOSE 2024**, 18th IEEE International Conference on Service-Oriented System Engineering
- **CSC 2024** (part of MCCSIS), Connected Smart Cities
- **ESOC 2023**, 10th European Conference On Service-Oriented And Cloud Computing
- **Microservices 2023**, 5th International Conference on Microservices
- **ACSOS 2023**, 4th International Conference on Autonomic Computing and Self-Organizing Systems

2.3. REVIEWER ACTIVITIES

Reviewing scientific contributions for the following international scientific conference series and journals:

Journal

- **TIOT** – ACM Transactions on Internet of Things
- **Heliyon**
- **JSS** – Journal of Systems & Software

Conference

- **CCGRID** – International Symposium on Cluster, Cloud and Internet Computing
- **IEEE STI** – Conference on Science, Technology and Innovation Indicators
- **IEEE CLOUD** – International Conference On Cloud Computing
- **IEEE SOSE** – International Conference on Service-Oriented System Engineering
- **ESOCC** – European Conference on Service-Oriented and Cloud Computing

2.4. RESEARCH GROUPS

OSMWARE: hOlistic Sustainable Management of distributed softWARE systems

DEPARTMENT OF COMPUTER SCIENCE, UNIVERSITY OF PISA

Research group coordinated by Prof. Antonio Brogi and comprising researchers from the namesake project.

Pisa, Italy

11/2022 – now

GIÒ: A Fog Computing Testbed for Research & Education

DEPARTMENT OF COMPUTER SCIENCE, UNIVERSITY OF PISA

Research group coordinated by Prof. Antonio Brogi and comprising researchers from the namesake project.

Pisa, Italy

06/2019 – now

Service-Oriented, Cloud and Fog Computing (SOCC) Research Group

DEPARTMENT OF COMPUTER SCIENCE, UNIVERSITY OF PISA

Research group coordinated by Prof. Antonio Brogi.

Pisa, Italy

05/2022 – now

2.5. RESEARCH PROJECTS

OSMWARE: hOlistic Sustainable Management of distributed softWARE systems

DEPARTMENT OF COMPUTER SCIENCE, UNIVERSITY OF PISA

- **Project code:** PRA_2022_64
- **Role:** project member.
- **Description:** the aim of the project - coordinated by Prof. Antonio Brogi - is to study prototypes and technologies to enable holistic and sustainable management of next-generation distributed software applications, also considering the economic impact.

Pisa, Italy

11/2022 – now

GIÒ: A Fog Computing Testbed for Research & Education

DEPARTMENT OF COMPUTER SCIENCE, UNIVERSITY OF PISA

- **Role:** project member.
- **Description:** the project - coordinated by Prof. Antonio Brogi - aims at studying and experimenting with innovative methodologies and techniques for the realisation of ambient intelligence functions on a departmental Fog network and has already produced prototypes of functions for the monitoring and irrigation of plants and for the self-regulation of the natural illumination of an environment and of a graphic-conversational interface that includes an updated interactive map of the Department.

Pisa, Italy

06/2019 – now

2.6. RESEARCH PRODUCTS

ECLYPSE

DESIGNER AND MAINTAINER

ECLYPSE (Edge-Cloud Ray-based Platform for Simulated Environments) is the first simulation library entirely written in Python for experimenting with deployment strategies in varying infrastructure conditions. It provides an interface for experimenting without and with an actual application implementation to be deployed.

 [vdecaro/eclipse](https://github.com/vdecaro/eclipse)

11/2023 – now

EdgeWise

DESIGNER AND MAINTAINER

EdgeWise is a Prolog open-source prototype for comparing and combining a declarative logic programming methodology with a Mixed Integer Linear Programming approach to determine eligible placements that minimise operational costs and reduce the number of used nodes to contain the amount of data transfers.

 [di-unipi-socc/edgewise](https://github.com/di-unipi-socc/edgewise)

07/2023 – now

DIPS

DESIGNER AND MAINTAINER

 [di-unipi-socc/dips](https://github.com/di-unipi-socc/dips)

06/2023 – now

DIPS (Declarative Intent Provisioning System) is a Prolog tool that exploits a declarative methodology for modelling and processing VNF-based service provisioning intents in a high-level language. The latest version also allows users to find static syntax conflicts among application operator and infrastructure provider intents.

DAPlacer

DESIGNER AND MAINTAINER

 [di-unipi-socc/daplacer](https://github.com/di-unipi-socc/daplacer)

06/2022

DAPlacer (Data-Aware Placer) is a Prolog tool for designing and proposing an eligible placement and a suitable routing strategy for a given service-oriented application within its data and requirements over a Cloud-IoT infrastructure.

2.7. SUPERVISED THESIS

10/2023 Intent-based networking e piazzamento sostenibile di catene VNF
Tommaso Di Riccio (B.Sc. thesis)

2.8. TEACHING EXPERIENCE

A.Y. 23/24	Laboratory 1, Teaching Assistant	<i>B.Sc. course</i>
A.Y. 22/23	Advanced Software Engineering, Teaching Assistant	<i>M.Sc. Course</i>
A.Y. 21/22	Cloud & Green Computing, Teaching Assistant	<i>M.Sc. Course</i>
A.Y. 21/22	Laboratory 1, Teaching Assistant	<i>B.Sc. course</i>

3. Talks

3.1. INVITED SEMINARS

14/10/2023 Declarative Cloud-IoT continuum: Gestire applicazioni, dati e reti con la programmazione logica
[UniPi Orienta educational guidance event](#)

16/04/2021 Assistenti Personali e Smart Building Applications
[Incontra Informatica educational guidance event](#)

3.2. CONFERENCE ORAL PRESENTATIONS

06/12/2023 Sustainable placement of VNF chains in Intent-based Networking
[16th IEEE/ACM International Conference on Utility and Cloud Computing](#)

05/07/2023 Declarative and Linear Programming Approaches to Service Placement, Reconciled
[16th IEEE International Conference On Cloud Computing \(online\)](#)

19/06/2023 Declarative Provisioning of Virtual Network Function Chains in Intent-based Networks
[3rd International Workshop on Intent-Based Networking](#)

29/11/2022 Data-Aware Application Placement and Management in the Cloud-IoT Continuum
[20th International Conference on Service-Oriented Computing](#)

05/07/2022 Data-aware service placement in the Cloud-IoT continuum
[16th Symposium and Summer School On Service-Oriented Computing](#)

4. Skills

4.1. LANGUAGE

Italian **Mother tongue**
English **C1**

4.2. DIGITAL SKILLS

VCS **Advanced** – *Git, Github, GitLab*
Python **Advanced** – *NetworkX, Pandas, Keras, scikit-learn, Matplotlib, Seaborn, Plotly*
Prolog **Advanced** – *SWI-Prolog*
Containerization **Advanced** – *Docker, docker-compose*
LaTeX **Advanced**
Java **Intermediate**
C, C++ **Intermediate**

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