

ALLEGATO G

DARIO BENVENUTI CURRICULUM VITAE

Dario Benvenuti is a **PhD. student** (scientific disciplinary sector **ING-INF/05**) at Sapienza Università di Roma, Italy, Dipartimento di Ingegneria Informatica, Automatica e Gestionale Antonio Ruberti (DIAG - Department of Computer, Control and Management Sciences and Engineering), since 2020.

Part I – General Information

Full Name	Dario Benvenuti
Spoken Languages	Italian (Native), English (Excellent)

Part II – Education

(II A) – Academic Achievements

Type	Year	Institution	Notes
University graduation	2020	Sapienza Università di Roma	<u>Master Degree</u> in Engineering in Computer Science. <u>Final mark</u> : 108/110. <u>Master Thesis</u> : “Assessing the impact of tutorials on videogames”. <u>Advisor</u> : Prof. Tiziana Catarci
University graduation	2016	Sapienza Università di Roma	<u>Bachelor Degree</u> in Engineering in Computer Science. <u>Final mark</u> : 106/110. <u>Bachelor Thesis</u> : “Acquisizione e riproduzione del battito cardiaco con Arduino”. <u>Advisor</u> : Prof. Giuseppe De Giacomo

(II B) – PhD Schools

Type	Year	Institution	Notes
PhD School	2021	Sapienza Università di Roma	“Advanced techniques for finding bugs in real-world software”. <u>Course Leader</u> : Emilio Coppa, University of Roma “La Sapienza”.

Part III – Research Activities

The **research activity** of Dario Benvenuti concerns **theoretical, methodological, and practical aspects** in different areas of **Computer Science**, including Business Process Management and Modelling, Process Mining, also applied to Data Pipelines, and Human-Computer Interaction. Such topics are challenged in the application domains of smart manufacturing and visualizations’ optimization.

For publication

Since October 2020, Dario Benvenuti has been part of an international team, involved in a **research activity** about modelling visualizations and exploiting those models to optimize queries performed against a database, to reduce latency in particular cases of user interaction.

Since January 2021, Dario Benvenuti has been also part of an international team, which is working in the context of the **European project DataCloud**, that investigate the discovery, modeling, deployment, and adaptation of big data pipelines.

His main research accomplishments in all the areas of interest are summarized below (see “Part IV - Publications” for a fully comprehensive list of publications, together with the respective publication venues).

Keywords	Brief Description
Business Process Management <i>Data-aware and Knowledge-intensive Processes</i>	Business Process Management (BPM) is an active research area that is based on the observation that each product and/or service that a company provides to the market is the outcome of several activities performed. Business processes are the key instruments for organizing such activities and understanding their interrelationships. In the context of the BPM field, the research of Dario Benvenuti concentrates on <i>the management of data aware processes representing the pipelines running behind workflows</i> . This topic is currently investigated in the context of the DataCloud project.
Process Modeling <i>Automated generation of models for data pipelines</i>	Process Modeling is the first and most important step in the BPM lifecycle, which intends to provide a high-level specification of a business process that is independent from implementation and serves as a basis for process automation and verification. On this topic, Dario Benvenuti is currently investigating, in the context of the DataCloud project, how to provide automatic techniques for process modeling that could discover and visualize the data pipelines laying behind process workflows.
Process Mining <i>Trace alignment</i> <i>Conformance checking</i> <i>Process enhancement</i>	Process mining is about extracting knowledge from event logs commonly available in today's information systems. These techniques provide new means to discover, monitor and improve processes in a variety of application domains. In the context of process mining, <i>trace alignment</i> consists of verifying whether the observed behavior of a process, stored in an event log, is compliant with its underlying model that encodes how it is allowed to be executed, and to repair it to ensure that norms and regulations are not violated. On this topic, Dario Benvenuti is currently investigating, in the context of the DataCloud project, how to automatically apply process mining techniques on logs to generate insights about the data pipelines laying behind process workflows. Furthermore, he is researching on techniques to perform conformance checking, analytics, deployment and adaptation of the discovered big data pipelines.

Human-Computer Interaction	Human-Computer Interaction (HCI) is a research topic focusing on the interfaces between users and computers. In the context of HCI, the current research of Dario Benvenuti concentrates on modeling information visualizations and exploiting the models to build the expected users' behavior that can be used to generate predictions and perform query optimization. His current research tackles a well-known (unsolved) challenge in this area, namely the automated quantification of usability of interactive systems. In this direction, he is focusing on developing a theoretical and practical framework that exploits Process Mining algorithms and technologies to automatically derive the usability of a system during its daily use. The impact of this research, which requires a strong background and expertise in BPM and HCI, is potentially ground-breaking in the HCI field, as it aims at superseding the expensive and time-consuming usability techniques for observing users in highly controlled environments over extended periods of time.
<i>Multimodal User Interfaces (UIs)</i>	
<i>Usability of Interactive Systems</i>	

Part IV – Publications

International Conferences

- C1. Dumitru Roman, Nikolay Nikolov, Brian Elvesæter, Ahmet Soylu, Radu Pronan, Dragi Kimovski, Andrea Marrella, Francesco Leotta, **Dario Benvenuti**, Mihhail Matskin, Giannis Ledakis, Anthony Simonet-Boulogne, Fernando Perales, Evgeny Kharlamov, Alexandre Ulisses, Arnor Solberg and Raffaele Ceccarelli. *DataCloud: Enabling the Big Data Pipelines on the Computing Continuum*, Research Challenges in Information Science - 15th International Conference, RCIS 2021, Limassol, Cyprus, May 11-14, 2021, Proceedings.
- C2. **Dario Benvenuti**, Emanuele Buda, Francesca Fraioli, Andrea Marrella, and Tiziana Catarci. *Detecting and Explaining Usability Issues of Consumer Electronic Products*, 18th IFIP Technical Committee 13 International Conference on Human-Computer Interaction, INTERACT 2021, Bari, Italy, August 30th-September 3rd, 2021.
- C3. Simone Agostinelli, **Dario Benvenuti**, Francesca De Luzi, Andrea Marrella. *Big Data Pipeline Discovery through Process Mining: Challenges and Research Directions*. ITBPM@BPM 2021: 50-55.

Theses

- M1.D. **Benvenuti**. *Assessing the impact of tutorials on videogames*. M.Sc. Thesis in Engineering in Computer Science, Sapienza Università di Roma, Italy. July 2020. Downloadable from [google drive](#).
- B1. **D. Benvenuti**. *Acquisizione e riproduzione del battito cardiaco con Arduino*. B.Sc. Thesis in Engineering in Computer Science, Sapienza Università di Roma, Italy. March 2016.

Part V – Further Information

For publication

(V A) – Participation to Research Projects

Dario Benvenuti is/has been involved in the following research projects:

1. (January 2021– *present*) **DataCloud**: European project about enabling the big data pipelines in the computing continuum. In this context, he is involved in defining a semi-automated tool, **DIS-PIPE**, that will allow companies to discover the big data pipelines laying behind their workflows, visualizing them and performing analytics.

(V B) - Supervision of Students

Since 2020, within DIAG, Dario Benvenuti **co-supervised 1 M.sc. student** in Engineering in Computer Science on the topics of visualization modeling and optimization.

Date 21/10/2021

(non soggetta ad autentica ai sensi dell'art. 39 del D.P.R. 28.12.2000, n. 445)