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ALESSIO ARLEO

SHORT BIO

Alessio Arleo received his PhD formation in Industrial and Information Engineering at the University of Perugia, under the supervision of Prof. Walter Didimo and Prof. Giuseppe Liotta.

During his PhD, he spent three months (Jan-Mar 2017) as a visiting PhD student in Davis, California, at Prof. Kwan-Liu Ma VIDI Lab. During this experience, further knowledge was acquired about distributed computing and algorithms. This programming paradigm was then applied to visualization problems studied at UC Davis.

He earned his PhD April 2018 at University of Perugia in *Computer and Industrial Engineering*. From May 2018 and until January 2024, he worked as Post-Doc at the *Centre for Visual Analytics Science and Technology (CVAST)*, at TU Vienna. Since February 2024, he is an assistant professor at TU Eindhoven, in the Visualization Cluster.

His main research interests lie within the fields of (distributed) layout algorithms for static and dynamic graphs, visual analytics, information diffusion, algorithm engineering, and information systems development. On these topics he wrote several papers, he collaborated with several international researchers, and participated to grants. He has teaching experience, as well as in supervising students. Recently, he also worked on the representation and interaction with graphs in virtual environments and expanded his research interest to visualizations applied to financial and healthcare application domains.

CURRENT POSITION

Assistant Professor at Eindhoven University of Technology

He is currently working in the Visualization Cluster at TU Eindhoven, within the Mathematics and Computer Science department.

EDUCATION

PostDoc Researcher at TU Wien in *Visual Analytics*

2018-2024

During this time, spent at the Centre for Visual Analytics Science and Technology in Vienna under the guidance of Prof. Silvia Miksch, he further developed his research on graph theory and Visual Analytics techniques on networks. These concepts were investigated and applied in the context of real-world use cases, such as Healthcare and Finance.

PHD in Industrial and Information Engineering

2014-2018

Thesis title: “Distributed Large Graph Visualization: Algorithms and Experiments”

Advisors: Prof. Giuseppe Liotta and Prof. Walter Didimo

Thesis Reviewers: Prof. Kwan-Liu Ma, Prof. Andrea Pietracaprina

Master's degree in Computer and Automation Engineering

2011 – 2014

Thesis: “Programming and development of an iOS app for AR navigation”.

Title achieved *cum laude*.

GRANTS **SANE: Visual Analytics for Event-Based Diffusion on Networks**

Grant DOI: 10.55776/I6635

Funded by the Austrian Science Fund (FWF)

Project start: April 2024

Project funded under the WEAVE cooperation program, with the University of Cologne as partner agency.

SELECTED PUBLICATIONS

Full list available on
personal website

B. Vago, D. Archambault, and A. Arleo

DynTrix: A Hybrid Representation for Dynamic Graphs

Accepted at *EuroVis* 2024

V. Filipov, A. Arleo, S. Miksch

Are We There Yet? A Roadmap of Network Visualization from Surveys to Task Taxonomies

To Appear on *Computer Graphics Forum*, 2023

V. Filipov, A. Arleo, M Bögl, S. Misch

On network structural and temporal encodings: a space and time odyssey

To Appear on *IEEE Transactions on Visualization and Computer Graphics*, 2023

A. Arleo, S. Miksch, D. Archambault

Event-based Dynamic Graph Drawing without the Agonizing Pain

Computer Graphics Forum, 41 (6), pp. 226-244, 2022

[Awarded Graphics Replicability Stamp](#)

D. Ceneda, C. Collins, M. El-Assady, S. Miksch, C. Tominski, and A. Arleo

A Heuristic Approach for Dual Expert/End-User Evaluation of Guidance in Visual Analytics

To Appear on *IEEE Transactions on Visualization and Computer Graphics*, 2023

A. Arleo, W. Didimo, G. Liotta, S. Miksch, F. Montecchiani

Influence Maximization With Visual Analytics

IEEE Transactions on Visualization and Computer Graphics, 28 (10), 3428-3440, 2022

[Awarded Graphics Replicability Stamp](#)

A. Arleo, C. Tsigkanos, R. A. Leite, S. Dustdar, S. Miksch, J. Sorger

Visual Exploration of Financial Data with Incremental Domain Knowledge

To appear on *Computer Graphics Forum*, 2022

J. Sorger, A. Arleo, W. Knecht, M. Waldner,
Egocentric Network Exploration for Immersive Analytics
Computer Graphics Forum, 40 (7), pp. 241-252, 2021

A. Arleo, W. Didimo, G. Liotta, F. Montecchiani
A Distributed Multilevel Force-directed Algorithm
IEEE Transactions on Parallel and Distributed Systems 30 (4), pp. 754 – 765, 2019

A. Arleo, W. Didimo, G. Liotta, F. Montecchiani
Profiling distributed graph processing systems through visual analytics
Future Generation Computer Systems, 30 (4), pp. 754-765, 2018

A. Arleo, W. Didimo, G. Liotta, F. Montecchiani
Large graph visualizations using a distributed computing platform
Information Sciences, 381, pp. 124-141, 2017

TEACHING
EXPERIENCE

“Information Design and Visualization” Co-Lecturer – at TU Wien

04/2021 – Ongoing

Co-Lecturer of the “Information Design and Visualization” Bachelor course held at TU Wien, teaching the “Information Visualization Techniques” lecture.

“Scientific Writing” Seminar Coordinator and Lecturer– at TU Wien

02/2019 – Ongoing

In this seminar students learn how to approach paper writing and literature search, writing a scientific paper and participating to a simulated mini-conference.

“Information Visualization” Co-Lecturer – at TU Wien

11/2018 – Ongoing

Co-Lecturer of the “Information Visualization” Master course held at TU Wien, teaching the “Hierarchy and Network Data” lecture.

CONFERENCES
AND
WORKSHOPS

Program Committee member of:

VIS Full Papers (2023 – Melbourne, Australia; 2024 – Tampa Bay, United States)

EuroVis Short Papers (2023 - Leipzig, Germany; 2024 – Odense, Denmark)

EuroVA workshop at EuroVis (2022 – Rome, Italy; 2023 – Leipzig, Germany; 2024 – Odense, Denmark)

PacificVIS Visualization Notes (2021 - Tianjin, China)

Organizing Committee member of:

Visual Process Analytics (VIPRA) workshop (2024 – Odense, Denmark)

Papers Co-Chair of:

Visual Analytics for Healthcare (VAHC) workshop at IEEE VIS (2021 – Vancouver, Canada; 2023 – Melbourne, Australia)

SCIENTIFIC
REVIEW
ACTIVITY
(PARTIAL)

Associate editor of the JAMIA Focus issue “*Interactive Visualization of Health Data for Digital and Personal Health*”

IEEE Transactions on Visualization and Computer Graphics (TVCG), IEEE Conference on Visualization (VIS), Eurographics Conference on Visualization (EuroVis), International Symposium on Graph Drawing and Network Visualization, Expert Systems with Applications journal (Ed. Elsevier), Discussiones Mathematicae journal, Pattern Recognition journal (Ed. Elsevier)

TECHNOLOGY
TRANSFER

In December 2017, “*CONTATTI yi-zhong-yi Srl*”, was founded: a spin-off company of the University of Perugia. The company is made up by engineers and linguists and it is aimed at offering advanced ICT solutions and smart technologies to promote and develop tourism in Italy. In particular, the company has Chinese tourists as main target for its solutions and services.

Eindhoven, February 29th 2024

(Alessio Arleo)