Luca Olivieri, Ph.D.

Employment History

10/2023 – present

🔖 **Assistant Professor (Non-tenure) - PostDoc**, Ca' Foscari University of Venice, Venice, Italy.
Research Team: Member of *Software and System Verification (SSV) group*.

07/2023 – 10/2023

🔖 **Research Fellow - PostDoc**, Ca' Foscari University of Venice, Venice, Italy.
Research project: *static analysis of robotic software by abstract interpretation, with the goal of extending the LiSA library for the analysis of such software based on ROS.*
Research Team: Member of *Software and System Verification (SSV) group*.
Supervisor: *Pietro Ferrara*

04/2018 – 06/2023

🔖 **Software Engineer and Research Scientist**, Corvallis Srl (previously JuliaSoft Srl), Verona, Italy.
Sector: *Information Tecnology*. Research and development member of the Julia static analyzer (now part of CodeSonar by GrammaTech, Inc.). Reasearch topics: *software security, data protection, automatic verification, static code analysis, abstract interpretation*. Software development and programming in Java, Java-Android, C#, Python, C++, C. Consulting, development, and support for the GrammaTech, Inc. on the CodeSonar product. Pre-sales and customer support teams member.

Education

2019 – 2023

🔖 **Ph.D. Computer Science, University of Verona**, Verona, Italy.
Industrial Ph.D. powered by Corvallis srl.
Certified *Doctor Europaeus*.
Topics: *software verification, static analysis, formal methods, blockchain, smart contracts*.
Thesis title: *Blockchain Software Verification and Optimization*.
Thesis Supervisors: *Fausto Spoto, Elisa Burato*
National Classification Level (Italy): *Dottorato di Ricerca - XXXV Ciclo - Ordinamento 2019 - D.M. 45/2013*

2016 – 2018

🔖 **M.Sc. Computer Science and Engineering, University of Verona**, Verona, Italy.
Topic: *Curriculum of Information Systems Security - Software Verification, data protection, formal methods, network security, malware, …*
Thesis title: *Automatic checking of software GDPR compliance*.
Thesis Supervisors: *Fausto Spoto, Pietro Ferrara*
Degree grade: *106/110*
National Classification Level (Italy): *Laurea Magistrale (di secondo livello) – Ordinamento 2014 - Classe LM-32*

2012 – 2015

🔖 **B.Sc. Computer Science, University of Verona**, Verona, Italy.
National Classification Level (Italy): *Laurea (di primo livello) - Ordinamento 2010 - Classe L-31*

2006 – 2011

🔖 **High School Computer Science, ITIS G. Marconi**, Verona, Italy.
National Classification Level (Italy): *Diploma (secondaria superiore)*

International Experience

28/02/2022 – 28/05/2022 🔖 **Erasmus+ Traineeships**, University of Rennes 1, IRISA Department, Rennes, France.
Traineeships Title: *Automatic verification and blockchains*.
Topics: *blockchain, smart contracts, program verification, static analysis, formal methods, programming (Java, Michelson)..*
Supervisors: *Thomas P. Jensen, Thomas Genet.*

11/10/2021 – 15/10/2021 🔖 **School on Verification Technology, Systems & Applications (School VTSA'21)**, University of Liége, Liége, Belgium.
Topics: *Verification of software and distributed systems*.

16/01/2020 – 18/10/2020 🔖 **School on Verification, Model Checking, and Abstract Interpretation (School VMCAI'20)**, New Orleans, Luisiana, United State.
Topics: *Software Verification via formal methods..*

Teaching History

10/2023 – 09/2024 (30h) 🔖 **Teacher**, Ca'Foscari University of Venice. Course: *Lab of Web Technologies* a.y. 2023/2024. 6 CFU/ECTS. Bachelor's Degree in Digital Management. Ca'Foscari University of Venice, Venice, Italy.

10/2021 – 06/2022 (54h) 🔖 **Teaching Assistant Senior**, Ca'Foscari University of Venice. Course: *Object Oriented Programming* a.y. 2021/2022. Bachelor's Degree in Computer Science. Ca'Foscari University of Venice, Venice, Italy.

04/2022 (2h) 🔖 **Lecture.** Title: *A guided tour to the verification of security threats: Demonstration on the tool GrammaTech CodeSonar.* Course: *A Guided Tour to Static Program Analysis: State-of-the-Art Tools and Techniques.* Promoted by Indian Education Ministery, Global Initiative of Academic Networks (GIAN - https://gian.iitkgp.ac.in/). Digital live event.

Community Service

🔖 **Artifact Evaluation Committee member**, 45th ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI'24), 2024.

🔖 **Extended Review Committee member**, 38th European Conference on Object-Oriented Programming (ECOOP'24), 2024.

🔖 **Artifact Evaluation Committee member**, 38th European Conference on Object-Oriented Programming (ECOOP'24), 2024.

🔖 **Reviewer**, 16th International Conference on Knowledge Science, Engineering and Management (KSEM'23), 2023.

🔖 **Reviewer**, 15th International Conference on Computational Collective Intelligence (ICCCI'23), 2023.

🔖 **Reviewer**, 21st International Conference on Computer Information Systems and Industrial Management Applications (CISIM'22), 2022.

Community Service (continued)

- **Technical Program committee member**, 14th International Conference on Advances in System Testing and Validation Lifecycle (VALID'22), 2022.

- **Reviewer**, 15th International Conference on Knowledge Science, Engineering and Management (KSEM'22), 2022.

- **Artifact Evaluation Committee member**, 29th Static Analysis Symposium (SAS'22), 2022.

- **Reviewer**, International Journal of Software Engineering and Knowledge Engineering (IJSEKE), 2021.

Skills

|	
Languages	Italian native speaker. Good reading, writing and speaking competencies for English.
Coding	Java, C#, Python, C++, C, Go, …
Markup Languages	XML/XSL, LaTeX, MarkDown.
Blockchains	Ethereum, Bitcoin, Hyperledger Fabric, Tendermint/Cosmos SDK, Tezos.
Databases	MySQL, PostgreSQL, SQLite.
Web Dev	Html, css, Tomcat Web Server.
Misc.	Academic and Industrial research, teaching, training, consultation.

Research Publications

Journal Articles

1. **L. Olivieri**, L. Negrini, V. Arceri, T. Jensen, and F. Spoto, "Design and implementation of static analyses for tezos smart contracts," *Distrib. Ledger Technol.*, Jan. 2024, Just Accepted. 🔗 DOI: 10.1145/3643567.

2. M. Crosara, **L. Olivieri**, F. Spoto, and F. Tagliaferro, "Fungible and non-fungible tokens with snapshots in java," *Cluster Computing*, pp. 1–18, 2022. 🔗 DOI: 10.1007/s10586-022-03756-3.

3. P. Ferrara, **L. Olivieri**, and F. Spoto, "Static privacy analysis by flow reconstruction of tainted data," *International Journal of Software Engineering and Knowledge Engineering*, vol. 31, no. 7, pp. 973–1016, 2021. 🔗 DOI: 10.1142/S0218194021500303.

Conference Proceedings

1. **L. Olivieri** and L. Pasetto, "Towards compliance of smart contracts with the european union data act," in *CEUR Workshop Proceedings*, 5th Workshop on Artificial Intelligence and Formal Verification, Logic, Automata, and Synthesis (OVERLAY 2023), vol. 3629, 2024, pp. 61–66.

2. **L. Olivieri**, T. Jensen, L. Negrini, and F. Spoto, "Michelsonlisa: A static analyzer for tezos," in *2023 IEEE International Conference on Pervasive Computing and Communications Workshops and other Affiliated Events (PerCom Workshops)*, 2023, pp. 80–85. 🔗 DOI: 10.1109/PerComWorkshops56833.2023.10150247.

3. **L. Olivieri**, L. Negrini, V. Arceri, *et al.*, "Information Flow Analysis for Detecting Non-Determinism in Blockchain," in *37th European Conference on Object-Oriented Programming (ECOOP 2023)*, ser. Leibniz International Proceedings in Informatics (LIPIcs), vol. 263, 2023, 23:1–23:25, ISBN: 978-3-95977-281-5. 🔗 DOI: 10.4230/LIPIcs.ECOOP.2023.23.

4 **L. Olivieri**, F. Tagliaferro, V. Arceri, *et al.*, "Ensuring determinism in blockchain software with golisa: An industrial experience report," in *Proceedings of the 11th ACM SIGPLAN International Workshop on the State Of the Art in Program Analysis*, ser. SOAP 2022, San Diego, CA, USA, 2022, pp. 23–29, ISBN: 9781450392747. 🔗 DOI: 10.1145/3520313.3534658.

5 M. Crosara, **L. Olivieri**, F. Spoto, and F. Tagliaferro, "Re-engineering erc-20 smart contracts with efficient snapshots for the java virtual machine," in *2021 Third International Conference on Blockchain Computing and Applications (BCCA)*, 2021, pp. 187–194. 🔗 DOI: 10.1109/BCCA53669.2021.9657047.

6 B. Marco, **L. Olivieri**, N. F. Spoto, *et al.*, "Cybersecurity impacts of the covid-19 pandemic in italy," in *CEUR Workshop Proceedings - Proceedings of the Italian Conference on Cybersecurity (ITASEC 2021)*, 2021, pp. 145–155.

7 **L. Olivieri**, F. Spoto, and F. Tagliaferro, "On-chain smart contract verification over tendermint," in *Financial Cryptography and Data Security. FC 2021 International Workshops*, 2021, pp. 333–347, ISBN: 978-3-662-63958-0. 🔗 DOI: 10.1007/978-3-662-63958-0_28.

8 P. Ferrara, **L. Olivieri**, and F. Spoto, "Backflow: Backward context-sensitive flow reconstruction of taint analysis results," in *Verification, Model Checking, and Abstract Interpretation*, 2020, pp. 23–43, ISBN: 978-3-030-39322-9.

9 P. Ferrara, **L. Olivieri**, and F. Spoto, "Tailoring taint analysis to gdpr," in *Privacy Technologies and Policy*, 2018, pp. 63–76, ISBN: 978-3-030-02547-2.

Talks

07/11/2023	🔖 Title: *Towards Compliance of Smart Contracts with the European Union Data Act*. 5th Workshop on Artificial Intelligence and Formal Verification, Logic, Automata, and synthesis (OVERLAY'23) - Rome, Italy.
19/07/2023	🔖 Title: *Information Flow Analysis for Detecting Non-Determinism in Blockchain*. 37th European Conference on Object-Oriented Programming (ECOOP'23) - University of Washington, Seattle, Washington, United States.
25/05/2023	🔖 Title: *Software Verification Challenges in Blockchain*. 2nd Software Verification Challenges in Blockchain Symposium (CSV'23) - Ca' Foscari University of Venice, Venice, Italy.
13/03/2023	🔖 Title: *MichelsonLiSA: a Static Analyzer for Tezos*. 4th Workshop on Blockchain theory and ApplicatIoNs (BRAIN'23) - Georgia State University, Atlanta, Georgia, United States.
14/06/2022	🔖 Title: *Ensuring Determinism in Blockchain Software with GoLiSA: An Industrial Experience Report*. 11th International Workshop on the State Of the Art in Program Analysis (SOAP'22) - San Diego, California, United States.
05/03/2021	🔖 Title: *On-Chain Smart Contract Verification over Tendermint*. 5th Workshop on Trusted Smart Contracts (WTSC'21) - Digital live event.
19/01/2020	🔖 Title: *BackFlow: Backward Context-Sensitive Flow Reconstruction of Taint Analysis Results*. 21st International Conference on Verification, Model Checking, and Abstract Interpretation (VMCAI'20) - New Orleans, Louisiana, United States.

Miscellaneous

Projects

- ∎ LiSA Analyzer project (`https://github.com/lisa-analyzer`)
- ∎ Hotmoka project (`https://hotmoka.io/`)