

LIVIO POMPIANU

EDUCATION

PhD in COMPUTER SCIENCE at University of Cagliari, Italy, **November 2014 – March 2018** Thesis: “Analysing blockchains and smart contracts: tools and techniques” | Advisor: Prof. Massimo BARTOLETTI

MSc in COMPUTER SCIENCE at University of Cagliari, Italy, **October 2012 – September 2014** Final Mark: 109/110 GPA: 28.55/30 Thesis: “A contract-oriented middleware” | Advisor: Prof. Massimo BARTOLETTI

BSc in COMPUTER SCIENCE at University of Cagliari, Italy, **October 2009 - July 2012** Final Mark: 110/110 *with honours* GPA: 27.95/30 Thesis: “Visual Engine for Reading On Network In Comprehensive Acceptation” | Advisor: Prof. Massimo BARTOLETTI

PUBLICATIONS

- M. Bartoletti, A. Bracciali, S. Lande, L. Pompianu. A general framework for blockchain Analytics. In Proc. Serial Workshop 2017.
- M. Bartoletti, L. Pompianu. An empirical analysis of smart contracts: platforms, applications, and design patterns. In Proc. Workshop on Trusted Smart Contracts 2017.
- M. Bartoletti, L. Pompianu. An analysis of Bitcoin OP RETURN metadata. Presented at the Bitcoin Workshop 2017.
- N. Atzei, M. Bartoletti, T. Cimoli, S. Lande, M. Murgia, A. S. Podda and L. Pompianu. Contract-oriented programming with timed session types. In Behavioural Types: from Theory to Tools, 2017.
- M. Bartoletti, T. Cimoli, M. Murgia, A. S. Podda, and L. Pompianu. A contract-oriented middleware, 2015. In Proc. 12th International Conference on Formal Aspects of Component Software (FACS 2015).
- M. Bartoletti, T. Cimoli, M. Murgia, A. S. Podda, and L. Pompianu. *Compliance and subtyping in timed session types*. In Proc. 35th IFIP International Conference on Formal Techniques for Distributed Objects, Components, and Systems. (FORTE 2015). Pages 161-177.

WORK EXPERIENCE

Visiting PhD student at University of Stirling, UK. **February 2017 – May 2017** I coordinated a project involving my research group in the University of Cagliari (led by Dr. Massimo Bartoletti) and the research group of the University of Stirling (led by Dr. Andrea Bracciali). We studied and developed a general framework for blockchain analytics. This work helps researchers in several ways. 1. It avoids to build a new ad-hoc tool for each new analysis. 2. It provides a general blockchain model abstracting from any blockchain. 3. It offers an efficient way for querying blockchains. My visit contributed to the development of a longer-term research collaboration on the topic between the Universities involved. The results were part of my PhD thesis and published at SERIAL 2017.

Teacher at Unitelsardegna, Cagliari. **September 2014 – November 2014** I was in charge of teaching to the owners of agricultural-related businesses material developed by full professors. The material includes certified email, digital signature and other tools required to dialogue with public administration. I simplified the professor's language making it understandable to such an audience, increasing the number of users who passed the final exam.

Research Intern at TCS research group, University of Cagliari. **March 2014 – October 2014** Developing distributed applications typically requires interacting with untrusted services. The main goal of my internship was to exploit a theory of timed behavioural contracts to formalise, design and implement a message-oriented middleware where distributed services can be dynamically composed, and their interaction monitored to detect contract violations. I used JavaEE, Ocaml, Uppaal and JUnit. The results show that the middleware allows programmers to reduce the complexity of developing distributed applications, by relieving programmers from the need to explicitly deal with the misbehaviour of external services. The middleware was part of my MSc thesis and it was published at FACS 2015.

Teaching assistant at University of Cagliari. **March 2013 – Current** As teaching assistant I prepare my own material and conduct (in place of the professor) laboratory lectures of 3 hours. I have worked 5 times as teaching assistant of Programming 2 (150 bachelor students) and 4 times as teaching assistant of Security Fundamentals (40 master students). In both courses my work led to an increase in the final evaluation (from the students) about the quality of the course, with respect to previous years.

Developer at Xorovo, Cagliari. **July 2012 – September 2012** My goal was to work on the Appoit project. I developed several application modules using HTML, CSS, Javascript, JQuery and then I worked to test the whole application.

Intern at University of Cagliari. **February 2012 – June 2012** I led a team of 5 students with the goal to study and develop a web platform to help dyslexic children do homework. The system needed a voice synthesizer to read different kinds of books. I collaborated with different stakeholders: the health department of the Autonomous Region of Sardinia and researchers from the Law department of our University. I also developed several client modules using HTML, CSS, Javascript. The final result was part of my BSc thesis that was awarded the highest grade possible.

MISCELLANEOUS

PhD Schools

- The Swiss Blockchain Summer School
- Summer School in Computer Security and Privacy
- Bertinoro International Spring School 2015

Talks

- An empirical analysis of smart contracts: platforms, applications, and design patterns - 7 April 2017 - Sliema, Malta
- An analysis of OP RETURN metadata - 7 April 2017 - Sliema, Malta
- An analysis of OP RETURN metadata - 17 March 2017 - Stirling, Scotland
- Innova.re - 5,6 November 2015 - Cagliari, Italy

Languages Italian (mother tongue), English (B2 Written-Spoken)

Research Interests Bitcoin, Ethereum, smart contracts, tools and techniques for blockchain analytics, languages and design patterns for smart contracts, computer security, programming languages, distributed systems.

Autorizzo il trattamento dei miei dati personali ai sensi del Decreto Legislativo 30 giugno 2003, n. 196 "Codice in materia di protezione dei dati personali"