

CLAUDIA CAULI

[Webpage](#) [eMail](#) [LinkedIn](#) [GitHub](#) [BitBucket](#)

INTERESTS **Critical** problems – Strong guarantees or proofs for critical problems – **Provable** methods – Provable security – Provable **authorization** – Automated detection of elevation of privilege vulnerabilities – Automated reasoning – **Rigorous** reasoning – Systematic testing of code and **infrastructure configuration** – Static analysis of code and infrastructure configuration – Lightweight verification of code and infrastructure configuration – Knowledge representation – **Ontologies** – Verification of artifacts produced with **LLMs** – Provable and rigorous reasoning applied to LLMs, GenAI, and ML artifacts.

EMPLOYMENT

10/2021 - current **Applied Scientist II** AWS, Automated Reasoning Group
*Applied Scientist based in London. **Delivering** provable detection of elevation of privilege vulnerabilities to customers in the Application Security organization (AWS AppSec). **Leading** intra-company engagement activities for Automated Reasoning in Europe. **Mentoring** new joiners and interns. Programming in **Java** and in verification languages that provide formal proofs: the **Dafny** verification language and the **Tamarin** security protocols prover.*

EDUCATION

10/2016 - 10/2022 **CSE PhD** University of Leicester & University of Gothenburg,
**Pre-Deployment Description Logic-based Reasoning for
Cloud Infrastructure Security**
ADVISOR: [Prof Nir Piterman](#)
9/2015 - 9/2016 **MSc in Advanced Computational Methods** University of Leicester, UK
Awarded with DISTINCTION AVG MARK: 91/100
10/2013 - 7/2015 **BSc in Computer Science** Università di Cagliari, Sardinia, Italy
Three-Years Degree completed in Two Years 110/110 CUM LAUDE

INTERNSHIPS

Summer '20 **Formal Verification Engineer Intern @ Apple** *Cupertino, CA, USA*
(cancelled) Verification of Apple's *System-on-Chip* (SoC) cryptographic primitives.
Summer '19 **SDE Intern @ AWS** *Cupertino, CA, USA.*
Working with [Dr Oksana Tkachuk](#) on logics and tools to reason about the security of cloud deployments. Application Security group (AppSec).
Spring '18 **SDE Intern @ AWS** *Cupertino, CA, USA*
Working with [Dr Oksana Tkachuk](#) on formal methods for Threat Modeling. Automated Reasoning Group (ARG).

PUBLICATIONS & ONGOING WORK

1. Cauli, C. and Piterman, N. *Equivalence of μ^p -Calculus and p -Automata*. Implementation and Application of Automata: 22nd International Conference, CIAA 2017, Proceedings (2017)
[Paper](#) [One-Page Abstract](#) [Poster](#)
2. Cauli, C., Li, Meng, Piterman, N., and Tkachuk, Oksana. *Pre-Deployment Security Assessment for Cloud Services through Semantic Reasoning*. CAV 2021
[Paper](#) [5-min Talk @ CAV21](#) [25-min Talk @ CAV21](#) [5-min Talk @ KR20 DC](#)

3. Cauli, C., [Ortiz, Magdalena](#), Piterman, N. *Closed- and Open-world Reasoning in DL-Lite for Cloud Infrastructure Security*. KR 2021

[Paper](#)

4. Cauli, C., Ortiz, M., Piterman, N. *Actions over Core-closed Knowledge Bases*. IJCAR 2022

[Paper](#)

PATENTS

1. Tkachuk, O., Cauli, C., Rungta, N., Bolignano P. V., Hortala J. R., Maher, S. *Automatically generating a machine-readable threat model using a template associated with an application or service*. US Patent 11,128,653. Assignee: Amazon Technologies Inc

[Patent](#)

PRIZES AND AWARDS

Best Speaker – 1st Prize *London Hopper Colloquium 2017* [Abstract](#) [Slides](#)
Best Poster Award – 3rd Prize *ACM-W UK-Inspire 2017*
Researcher Development Fund Award 2017 *Graduate School, UoL*
O-Sys Best Student Prize 2016 *Dept. of Informatics, UoL*
Best Theoretical Project Prize 2016 *Dept. of Informatics, UoL*

PARTICIPATION TO EVENTS

Speaker ACM-W UK Inspire 2017 *University of Hertfordshire, UK, 12 May 2017*
Speaker London Hopper Colloquium 2017 *BCS Headquarters London, UK, 25 May 2017*
Speaker CIAA 2017 *Université Paris-Est Marne-la-Vallée, Paris, 27–30 June 2017*
Marktoberdorf Summer School *Marktoberdorf, Germany, 2–11 August 2017*
ACM womENcourage 2017 *Universitat Politècnica de Catalunya, Barcelona, 6–8 Sept. 2017*
Highlights of Logics, Games, and Automata *Queen Mary University, London, 12–15 Sept. 2017*
Speaker ICCSW'17 *Imperial College London, 26–27 Sept. 2017*
2nd Winter School in Formal Verification *Jerusalem, 17–21 December 2017*
FLoC 2018 & CAV2018 *University of Oxford, Oxford, 12–16 July 2018*
Invited Speaker London Hopper Colloquium 2018 *BCS HQ London, UK, October 2018*
Facebook TaV Symposium 2019 *Facebook HQ, London, November 2019*
Speaker KR 2020 Doctoral Consortium *Virtual, September 2020*
Speaker FMCAD 2020 Doctoral Consortium *Virtual, October 2020*
Speaker AWS *Virtual, February 2021*
Speaker CAV 2021 *Virtual, July 2021*
Speaker DL 2021 *Virtual, September 2021*
Speaker KR 2021 *Virtual, November 2021*
Speaker IJCAR 2022 (FLoC) *Haifa, August 2022*
Attendee Dagstuhl Seminar on [Resilient Software Configuration and Infrastructure Code Analysis](#)