

# CLAUDIA CAULI

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

**INTERESTS** Provable techniques and formal methods for security and industry. Verification and falsification of standard and quantitative models. Logics and model checking.

## EMPLOYMENT

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10/2021 - current **Applied Scientist II** AWS, Automated Reasoning Group (ARG)

## EDUCATION

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10/2016 - 9/2021 **CSE PhD** University of Leicester & University of Gothenburg,  
Formal Methods for Threat Modeling **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, Italy  
*Three-Years Degree completed in Two Years* **110/110 CUM LAUDE**

## INTERNSHIPS

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*Summer '20 (cancelled)* **Formal Verification Engineer Intern @ Apple** *Cupertino, CA, USA*  
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

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- Cauli, C. and Piterman, N. *Equivalence of  $\mu^p$ -Calculus and  $p$ -Automata*. Implementation and Application of Automata: 22nd International Conference, CIAA 2017, Proceedings (2017)  
[Paper](#) [One-Page Abstract](#) [Poster](#)
- 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](#)
- Cauli, C., [Ortiz, Magdalena](#), Piterman, N. *Closed- and Open-world Reasoning in DL-Lite for Cloud Infrastructure Security*. KR 2021  
[Paper](#)
- Cauli, C., Ortiz, M., Piterman, N. *Actions over Core-closed Knowledge Bases*. *Under Submission*

## PATENTS

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- 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

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|   |                                      |                          |                        |
|---|--------------------------------------|--------------------------|------------------------|
| Best Speaker – 1 <sup>st</sup> Prize      | <i>London Hopper Colloquium 2017</i> | <a href="#">Abstract</a> | <a href="#">Slides</a> |
| Best Poster Award – 3 <sup>rd</sup> Prize | <i>ACM-W UK-Inspire 2017</i>         |                          |                        |
| Researcher Development Fund Award 2017    | <i>Graduate School, UoL</i>          |                          |                        |
| O-Sys Best Student Prize 2016             | <i>Dept. of Informatics, UoL</i>     |                          |                        |
| Best Theoretical Project Prize 2016       | <i>Dept. of Informatics, UoL</i>     |                          |                        |

## PARTICIPATION TO EVENTS

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|------------------------|--|--|
| <i>Speaker</i>         | ACM-W UK Inspire 2017                                | <i>University of Hertfordshire, UK, 12 May 2017</i>                    |
| <i>Speaker</i>         | London Hopper Colloquium 2017                        | <i>BCS Headquarters London, UK, 25 May 2017</i>                        |
| <i>Speaker</i>         | CIAA 2017  | <i>Université Paris-Est Marne-la-Vallée, Paris, 27–30 June 2017</i>    |
|                        | Marktoberdorf Summer School                          | <i>Marktoberdorf, Germany, 2–11 August 2017</i>                        |
|                        | ACM womENcourage 2017                                | <i>Universitat Politècnica de Catalunya, Barcelona, 6–8 Sept. 2017</i> |
|                        | Highlights of Logics, Games, and Automata            | <i>Queen Mary University, London, 12–15 Sept. 2017</i>                 |
| <i>Speaker</i>         | ICCSW'17   | <i>Imperial College London, 26–27 Sept. 2017</i>                       |
|                        | 2 <sup>nd</sup> Winter School in Formal Verification | <i>Jerusalem, 17–21 December 2017</i>                                  |
|                        | FLoC 2018 & CAV2018                                  | <i>University of Oxford, Oxford, 12–16 July 2018</i>                   |
| <i>Invited Speaker</i> | London Hopper Colloquium 2018                        | <i>BCS HQ London, UK, October 2018</i>                                 |
|                        | Facebook TaV Symposium 2019                          | <i>Facebook HQ, London, November 2019</i>                              |
| <i>Speaker</i>         | KR 2020 Doctoral Consortium                          | <i>Virtual, September 2020</i>   |
| <i>Speaker</i>         | FMCAD 2020 Doctoral Consortium                       | <i>Virtual, October 2020</i>   |
| <i>Speaker</i>         | AWS  | <i>Virtual, February 2021</i>  |
| <i>Speaker</i>         | CAV 2021   | <i>Virtual, July 2021</i>  |
| <i>Speaker</i>         | DL 2021  | <i>Virtual, September 2021</i>   |
| <i>Speaker</i>         | KR 2021  | <i>Virtual, November 2021</i>  |

## TEACHING

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During the part of my PhD that was spent at the University of Leicester, my teaching obligations included: lab sessions, surgeries, problem classes, coursework marking, exam invigilations, and small-group teaching. I have been a Teaching Assistant for the following modules:

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|--------|---|
| CO7105 | <i>Advanced C++ Programming</i>                     |
| CO2008 | <i>Functional Programming</i>                       |
| CO1012 | <i>Discrete Structures</i>                          |
| CO1005 | <i>Data Structures and Development Environments</i> |
| CO1016 | <i>Computer Systems</i>                             |
| CO1003 | <i>Program Design in Java</i>                       |

## THESES

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|------------|--|
| MSc Thesis | “AUTOMATA-THEORETIC TECHNIQUES FOR PROBABILISTIC $\mu$ -CALCULUS”,<br>Department of Informatics, University of Leicester, 2016.<br>Supervisor: Dr Nir Piterman                       |
| BSc Thesis | “SIMULATION AND ANALYSIS OF A RESERVATION MARKETPLACE”,<br>Department of Mathematics and Informatics, Università degli Studi di Cagliari, 2015.<br>Supervisor: Dr Massimo Bartoletti |

## CERTIFICATES & PERSONAL SKILLS

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|------------------------|---|------|
| ADVANCED COMMUNICATION | Popular Science Presentation Training         | 2020 |
| THE LEICESTER AWARD    | Personal Skills Development Programme         | 2016 |
| GRE – 313/340          | Quantitative 161/170, Verbal 152/170          | 2015 |
| IELTS – 7.5            | International English Language Testing System | 2014 |

## TECHNICAL SKILLS

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PROGRAMMING  
TOOLS

Java, Scala, C++  
IntelliJ, Eclipse, Git

## LANGUAGES

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ENGLISH Fluent  
SWEDISH Beginner

ITALIAN Native

SPANISH Beginner