



# Gian Pietro Farina

Doctoral Candidate at SUNY - University at Buffalo  
Graduation Date: Feb 2020

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## Languages

- Italian ●●●●●
- English ●●●●●

## About Me

Passionate for sciences, technology and philosophy. I am currently finishing my Ph.D in Computer Science at University at Buffalo. In my research I build tools to help developers discover bugs in their programs, especially bugs which might lead to security breaches: e.g. violations of Differential Privacy and Noninterference. The techniques I most frequently use are: type systems, Hoare logics, and symbolic execution.

## Working Experience

- 05/2019-08/2019 **Internship** Harvard University  
Development of a relational symbolic execution engine for R programs for Differential Privacy
- 01/2019-05/2019 **Long Term Visitor** Simons Institute - UC Berkeley  
Data Privacy: Foundations and Applications
- 2015-2018 **Teaching Assistant** University at Buffalo(USA)/University at Dundee (UK)  
I served as teaching assistant for the following classes: Introduction to Programming Languages (2018), Advanced Topics in Programming Languages (2017), Differential Privacy (2016), Introduction to Data Mining and Machine Learning(2015)
- March/2014-Dec/2014 **Penetration Tester** Accenture, Prague, CZ  
Experience with OWASP methodology, ESXi, vSphere, Kali, Burp-Suite, NESSUS, mimikatz, Wireshark
- Oct/2013-Feb/2014 **Information Security Analyst (Internship)** LUTECH SPA, Milano, IT  
Log Analysis with LogStash, Elasticsearch, Kibana, SNORT, statistical Analysis for Behavioural Anomaly Detection
- Oct/2012-Oct/2013 **Cryptography Researcher** ETH, Zurich, CH  
Research on Black Box Reductions and Meta Reductions in the Random Oracle Model
- Jan/2012-Aug/2012 **Cryptanalysis Researcher** Aalto University, Helsinki, FI  
Implementation of the Block Ciphers PRESENT and Maya and test for the statistical saturation attack (SSA) on the Block Cipher PRESENT

## Programming Languages and Verification Tools

- ✓ Java ●●●●●
- ✓ oCaml ●●●●●
- ✓ C ●●●●●
- ✓ R ●●●●●
- ✓ NuSMV Model Checker ●●●●●
- ✓ Java Path Finder ●●●●●
- ✓ TLA+ ●●●●●
- ✓ Coq ●●●●●

## Education

- 2015-Present **Doctorate in Computer Science** University at Dundee → SUNY - University at Buffalo  
Formal verification of probabilistic relational properties, e.g. **differential privacy**
- 2010-2012 **Computer Science, Master Degree (110/110 with Laude)** Università di Milano  
Thesis: Distinguishing Distributions Using One-Bit Linear Trails on PRESENT Cipher
- 2007-2010 **Computer Science, Bachelor Degree (110/110 with Laude)** Alma Mater Università di Bologna  
Thesis: Automatic Proofs of Classical Results in Computational Cryptography (Italian)

## Publications

Relational Symbolic Execution - PPDP 2019, Differentially Private Bayesian Programming - CCS 2016, PrivInfer: A framework for differentially private Bayesian Programming - poster at TPDP 2016, Towards differentially private probabilistic programming - poster at NIPS 2014

## Interests and Hobbies

Programming Languages Theory and Applications, Verification, Security, Differential Privacy, Testing, Philosophy, Cooking, Football, Arts