PHILIP OFFTERMATT

Formal Verification Researcher

→ Using math, logic and creativity to ensure critical software is verifiably correct.

@ p.offtermatt@gmail.com | Address: Furtweg 29, Unterschleissheim, Germany | in linkedin.com/in/p-offtermatt
p-offtermatt.github.io | +49 1734858397 | github.com/p-offtermatt

EXPERIENCE

Doctoral Researcher

Université de Sherbrooke → Max Planck Institute for Software Systems → University of Warsaw

01/2020 – Present

- Authored **FastForward**, a tool for efficiently checking safety properties of Petri nets (C#, Z3, Gurobi)
- Developed insights for the verification of workflow nets, implemented as an extension of **FastForward** (C#, Z3)

Research Intern

Informal Systems

04/2022 – 07/2022 Remote

- Extended the **Apalache** model checker in order to verify liveness properties of blockchain protocols (Scala, TLA+)
- Reviewed and contributed to Scala code, TLA+ specifications, design documents and user-facing documentation

Backend Developer / Data Analysis Intern

Motius

09/2019 – 12/2019 / 09/2018 – 01/2019

- Developed an IoT gateway for an automotive setting, bridging the gap between the car and arbitrary, untrusted bluetooth devices (Python, MQTT, Go)
- Gathered customer feedback, presented project progress bi-weekly
- Authored a pipeline for robust data extraction of applicant and project tender data (Python, spaCy, Docker, SQL)
- Performed data analysis to identify impactful criteria for matching applicants to project offers (Python, SQL, pandas)

Research & Teaching Assistant

Technical University of Munich

10/2015 – 09/2019 Munich

- Authored an analyzer for expected execution time of processes as an open source plugin for **ProM** (Java, Python)
- Developed **ProtocolAssist**, a tool for interactively specifying and verifying correctness conditions of population protocols (Python)
- Held over 100 exercise sessions for roughly 20 students each, covering algorithms, data structures, discrete mathematics, and foundations of theoretical computer science

PUBLICATIONS

- **The Complexity of Soundness in Workflow Nets** in *LICS*, 2022
- **Verifying Generalised and Structural Soundness of Workflow Nets via Relaxations** in *CAV*, 2022
- **Continuous One-Counter Automata** in *LICS*, 2021
- **Directed Reachability for Infinite-State Systems** in *TACAS*, 2021
- **Computing the Expected Execution Time of Probabilistic Workflow Nets** in *TACAS*, 2019

EDUCATION

Ph.D. in Informatics

Université de Sherbrooke

01/2020 – Anticipated graduation: 01/2023

Thesis: Efficient Verification of Infinite-State Systems via Relaxations | Jointly supervised by Michael Blondin and Filip Mazowiecki

Master of Informatics

Technical University of Munich

04/2018 – 11/2019

Thesis: Safety for Parameterized Systems via View Abstraction | GPA: 1.3 | Among the top 15% of graduates in GPA

Bachelor of Informatics

Technical University of Munich

10/2014 – 03/2018

Exchange Semester at Al Akhawayn University in Morocoo

MISCELLANEOUS

Award for excellence in teaching
Received in 2018 from the Technical University of Munich.

Professional Service & Talks
Member of the TACAS22 Artifact Evaluation Comittee | Reviewer for academic conferences | Speaker at 10+ conferences & seminars

Social Engagement
Volunteer for the Girl's Day at MPI-SWS (enabled high-school aged girls to get insights into fields with low female representation), MINGA Mentor at TUM (helped international students arriving in Munich)

HOBBIES

Coding | 3D Printing | Minipainting | Swimming | Jogging | Board Games

PROFESSIONAL SKILLS