

Antoon Purnal (Toon)

PHD RESEARCHER IN SECURITY. PIVOTS QUICKLY. ENJOYS PUBLIC SPEAKING.

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Education

PhD Candidate (FWO Fellow) • imec-COSIC, KU Leuven

MICROARCHITECTURAL SECURITY • SPECIALIZED CRYPTOGRAPHY

Oct. 2018 - PRESENT

Security Research with publications in top-tier (A*) venues.

Thesis Student Mentor, Teaching Assistant, Ombudsperson.

MSc, Electrical Engineering • KU Leuven

EMBEDDED SYSTEMS • SUMMA CUM LAUDE (86%) • MSc THESIS PRIZE 🏆

Sept. 2016 - Jun. 2018

MSc Thesis: *Protecting KECCAK against combined side-channel and fault attacks.*

Student teaching for EM Waves, Calculus III, Problem Solving.

BSc, Engineering Science • KU Leuven

ELECTRICAL ENGINEERING - COMPUTER SCIENCE • MAGNA CUM LAUDE (80%)

Sept. 2013 - Jun. 2016

Selected Publications

USENIX SEC '22 *Double Trouble: Combined Heterogeneous Attacks on Non-inclusive Cache Hierarchies*

AR: 18% 📄 🔥 🎥 (Antoon Purnal, Furkan Turan, Ingrid Verbauwhede)

ACM CCS '21 *Prime+Scope: Overcoming the Observer Effect for High-Precision Cache Contention Attacks*

AR: 22% 📄 🔥 🎥 (Antoon Purnal, Furkan Turan, Ingrid Verbauwhede)

IEEE S&P '21 *Systematic Analysis of Randomization-based Protected Cache Architectures*

AR: 12% 📄 🔥 🎥 (Antoon Purnal, Lukas Giner, Daniel Gruss, Ingrid Verbauwhede)

Experience

Security Research Intern

INTEL CORPORATION

Jun. 2022 - Aug. 2022

I joined the forward-looking Intel Labs for microarchitectural security research.

Exchange Researcher

NATIONAL CHIAO TUNG UNIVERSITY (NCTU), TAIWAN

Jul. 2017 - Aug. 2017

I designed real-time and low-power cryptographic hardware, with tape-out in TSMC 90nm.

Cyber Security Intern

SWEEPATIC

Oct. 2016 - Apr. 2017

I performed OSINT attack surface research and delivered a training session for a customer.

Educational Volunteer & Teamleader

YOUTH WORK

Jul. 2015 - Dec. 2019

As a volunteer, I lead and trained future generations of playworkers.

Skills

Programming Software: **Python, C, ARM/x86/MIPS Assembly**

Hardware: **VHDL, Verilog**

Enablers: **LaTeX, Beamer, Git, Matlab**

Languages Proficient: **Dutch, English**

Basic: **French, German, Spanish**

Miscellaneous CHES 2022 Rump Session Award. Former lead guitarist in local band and university big band.