(+32) 0494 99 39 28
Brussels, Belgium
thomasdebelle@skynet.be

Thomas Debelle

Electrical Engineering M.Sc. Student

thomas.debelle.be
github.com/Tfloow
Linkedin

I am a passionate engineering student that always thrives to discover new things related to ECE and security. I also have a strong incline for education and sharing my love and knowledge to others. I also provide my know-how and expertise in IT as an independent consultant.

Education

M. Sc. in Electrical Engineering, chip design and electronics — **September 2024 - June 2026**
KULeuven — *Leuven, Belgium*

B. Sc. in Engineering, electricity and computer Science — **September 2021 - June 2024**
UCLouvain, Electricity (grade : 15.43) Computer Science (grade : 16.83) — *Louvain-la-Neuve, Belgium*

Skills

Tools and Languages Python, C,Verilog & System Verilog (Vivado, Quartus), Cadence, JAVA, Matlab, Simulink, Git, LaTeX, Bash, Fusion 360, Altium Designer, Chisel

Languages French (Mother Tongue), English (C1), Dutch (B2)

Technical Experience

INDEPENDENT IT CONSULTANT (Junior Entreprise) — **April 2024 - Now**
Junior Consulting Louvain — *Louvain-la-Neuve, Belgium*

- Digital marketing consultant advising small local business.
- Skills: SEO, Odoo suite, Digital Marketing, Google Analytics, Wordpress, ERP

VULNERABILITY ANALYST INTERN — **June 2025 - August 2025**
NXP Semiconductors — *Leuven, Belgium*

- Build a low-cost demonstration device of an ElectroMagnetic Fault Injection (EMFI) attack against a TI LAUNCHXL-CC2640R2 board.
- Replicated a researcher's attack against the crypto core. Extended it to target a vulnerability in the bootflow sequence to re-gain JTAG communication.
- Skills: Vulnerability analyst, Python, Chipwshisperer, Side-Channel, 3D printing, Soldering, EMFI, EM

TUTOR — **September 2024 - June 2024**
UCLouvain — *Louvain-la-Neuve, Belgium*

- Teaching Signals & Systems and Introduction to Computer Science.
- Tutoring for a class of 30 second year bachelor students and 24 first year bachelor students.
- Skills: Teaching, Python, Signal and Systems theory

Projects

Master thesis - Accelerating LLM Inference using Self-Adaptive Anda Format w/o Calibration — **June 2025 - June 2026**

- Working on state of the art quantization algorithm and group float arithmetic. Keys towards efficient and affordable on the edge LLM's.
- Skills: Python, PyTorch, transformers, research, academic writing, PEFT, LoRA, cocotb, performance modelling

Senior year Electrical Engineering Projects — **September 2025 - June 2026**

- Design of a class-A Power Amplifier with $P_{sat} = 22.51dBm$ and ripple in linear region below $0.08dB$ and $PAE_{max} = 43.66\%$
- Build an TD3 based optimizer for a two-stage OTA reaching pareto-optimal results. Embedded Generative AI for explanation of the design and refinement.
- GeMM accelerator using a $4 \times 4 \times 4$ MACs systolic array reaching high spatial utilization and arithmetic intensity.

Design of the RSA algorithm on a co-processor using ARM and a FPGA — **October 2024 - December 2024**

- Implemented the RSA algorithm in C, ARM assembly, and partial implementation on *FPGA* using *verilog*. Improved the execution speed by over **1000 %** compared to pure C implementation using a co-processor.
- Used state of the art technique to improve speed. *Montgomery multiplication* for efficient multiplication in hardware. Implemented the *Chinese Remainder Theorem* that shows a **25 %** speed improvement compared to a naive approach.
- Improved soft skills such as : *project management*, *leadership*, *critical thinking*, *outside of the box thinking*.

Extracurricular

CyberSecurity Challenge: semi-finalist and finalist of the 2024 and 2025 edition of the CyberSecurity Challenge. A CTF focused on Cybersecurity hosted at the Royal Military Academy. **2024-2025**

UCLouvain Down: built a website that monitors the status of UCLouvain's services. Improved my knowledge in web development, digital strategy, database and network. **2024**

LIMUN: participated in the biggest European MUN conference in London. Representing the United States at UNEP. **2023-2024**