(+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 expected to graduate from KU Leuven in June 2026. I am a multi-faceted student with a strong incline towards AI architecture, Cyber security and Mixed signals system design. My background provides me a deep understanding of current trends and designs of Semiconductors circuitry. I am now looking to find new opportunities in Belgium and abroad.

Education

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

Hardware/EDA	Cadence, Altium, Verilog, SystemVerilog, Chisel, Vivado, Quartus, Fusion 360
Software/AI	Python, PyTorch, LLM, HuggingFace, C, ASM, JAVA, Matlab, Simulink, Git, Bash
Proven Expertise	Embedded Systems, FPGA, Reverse Engineering, Hardware Security, EMFI, AI Accelerators
Languages	French (Mother Tongue), English (C1), Dutch (B2)

Technical Experience

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, Embedded Systems, Reverse Engineering, JTAG

INDEPENDENT IT CONSULTANT (Junior Entreprise) — **April 2024 - July 2025**
Junior Consulting Louvain — *Louvain-la-Neuve, Belgium*

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

TUTOR — **September 2023 - 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 Hardware-aware quantization with Hardware/Software co-design for ASICs. 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.
- Skills: RF-mm wave Power Amplifier design, Analog design, Cadence, Python, Generative AI, Optimization, Verilog, Test and Verification, Direct mapped memory, Quartus

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.
- Skills: Pynq-Z1 development, Embedded systems, C, ASM, FPGA, Test and Verification, Xilinx toolchain, Vitis

Extracurricular

AI-HDL Comptetution: Selected participant of the AI HDL competition hosted by the University of Arizona. **2026**

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**