Gert Dekkers



Senior AI Specialist at Nobi

Geel, Belgium linkedin.com/in/gert-dekkers-22946078 Google Scholar
github.com/gertdekkers

PROFILE

I build AI that has to survive contact with the real world: on resource-constrained edge devices, in harsh conditions such as space, and in care homes where a false alarm or a missed fall actually matters.

My PhD at KU Leuven was about recognising daily activities with a wireless network of microphones — on an energy budget. At Magics Technologies I went from ML engineer on industrial ML projects to leading a team of chip designers and software/ML engineers building a space-grade neural network accelerator and software stack.

Today I'm a Senior AI Specialist at Nobi, working on vision-based intelligence helping people in need.

EXPERIENCE

Senior AI Specialist — Nobi `Aug 2025 – present · Belgium`

Working on vision-based intelligence for smart lights in elderly care. I have primarily been working on reducing the false-positive rate of our fall detection system.

- Halved the false-positive rate of our fall detection system

Team Lead AI Engineering — Magics Technologies `Sep 2022 – Jun 2025 · Geel, Belgium`

I contributed to the development of a space-grade neural network accelerator, where reliability comes from radiation-hardening in both hardware and software. I led a heterogeneous team of digital chip designers and software/ML engineers, while at the same time contributing to the development of the software ecosystem. I co-supervised two PhD students where I initiated the project funding for one.

- Resource management and performance evaluation
- Technical lead for all software activities
- Development of a software stack to deploy neural networks on custom accelerators
- Project proposal writing

Machine Learning Engineer — Magics Technologies `Apr 2021 – Sep 2022 · Geel, Belgium`

I was responsible for anything from data science to project management on industrial ML problems. The main project was the development of an edge device along a central management system for the fleet capable of ultrasound AI inference with ultrasound as data modality.

- Syringe break detection from ultrasound with neural networks (medical)
- Regression of cracks/expansion in packaged nuclear waste from acoustic emission

Research Intern — Sonos `Jun 2019 – Dec 2019 · Santa Barbara, USA`

Designed and evaluated neural network architectures for estimating room geometry from multi-channel acoustic impulse responses.

PhD Researcher — KU Leuven Jan 2015 – Apr 2022 · Geel, Belgium

Automatic classification of daily activities at home with a wireless acoustic sensor network — from collecting the dataset, learning an ADL classification model, to making every node cheaper to run.

Degree: PhD in Engineering Technology (2021) — thesis *Sound recognition with resource-constrained wireless sensor networks*

- Built the SINS dataset
- Dynamic sensor activation during late fusion
- Joint quantisation and pruning for mixed-precision arithmetic
- Organised DCASE 2018 Task 5

Research Assistant — KU Leuven Nov 2013 – Dec 2014 · Geel, Belgium

Designed and implemented a multi-channel noise reduction algorithm for speech recognition.

EDUCATION

MSc Engineering Technology, Electronics-ICT — KU Leuven 2011 – 2013
Cum laude · thesis on 2D audio source localisation with an acoustic sensor network

Professional Bachelor Electronics-ICT — KH Kempen 2008 – 2011
Cum laude

SKILLS

AI / ML	PyTorch (quantization) · TensorFlow (Lite) · Apache TVM · Xilinx Brevitas · ONNX · MLflow · Weights & Biases
Engineering	Embedded AI · Quantisation & pruning · (Multi-channel) signal processing · Sensor fusion
Sensing	Audio & acoustics · Vision (cameras) · Ultrasound · Acoustic emission
Programming	Python · uv · Poetry · Ruff · pytest · C · Bash · LaTeX · Git · Claude Code · OpenCode
Infrastructure	Docker (compose) · CMake · GitHub Actions · Grafana · Prometheus · PostgreSQL · AWS · Google Cloud
Leadership	Technical supervision · Mentoring · Team wellbeing · Project management · Project acquisition
Languages	Dutch · English

PUBLICATIONS & REPORTS

2024 Understanding the Limitations of Single-Event Upset Simulation in Deep Learning Libraries — SPAICE 2024

2024 Single-Event Upset Analysis of a Systolic Array based Deep Neural Network Accelerator — Technical report

2022 Dynamic sensor activation and decision-level fusion in wireless acoustic sensor networks for classification of domestic activities — Information Fusion 77

2021 Sound recognition with resource-constrained wireless sensor networks — PhD thesis, KU Leuven

2021 QliP: joint quantisation and pruning by iterative ranking of decomposed saliency-cost ratios — Technical report

2018 A multi-layered energy consumption model for smart wireless acoustic sensor networks — Technical report

2018 DCASE 2018 Challenge – Task 5: Monitoring of domestic activities based on multi-channel acoustics — Technical report

2017 The SINS database for detection of daily activities in a home environment using an acoustic sensor network — DCASE Workshop 2017

2015 A multi-channel speech enhancement framework for robust NMF-based speech recognition for speech-impaired users — INTERSPEECH 2015

Full list: Google Scholar

OPEN SOURCE & OTHER

2020 d.abstract — dataset and pre-processing abstraction — GitHub

2018 WASN-EM — energy model for wireless acoustic sensor networks — GitHub

2017 SINS database — GitHub

2018 DCASE 2018 Challenge — Task 5: Monitoring of domestic activities — Task organiser