Sander De Coninck

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SUMMARY

PhD Student in the DECIDE research group at IDLab, Ghent University – imec, focused on creating practical, edge-friendly privacy solutions for computer vision. I specialize in developing adversarial transformation techniques to obfuscate sensitive information while balancing privacy and utility.

EDUCATION

Doctor in Information Engineering Technology — Ghent University
Topic: Near-Sensor Filtering of Privacy-Sensitive Features from Rich Data — *Sept. 2021–Sept. 2026*
Awarded a highly-competitive (20% success rate) Special Research Fund in 2022

Master in Information Engineering Technology — Ghent University
Graduated Summa cum laude, top of class (rank 1/58) — *Sept. 2020-July 2021*

SUMMER SCHOOLS

Nordic Probabilistic AI School (ProbAI) — Trondheim, Norway
Focus: Probabilistic Machine Learning and Bayesian Inference — *June 2023*

Summer School on Privacy-Preserving Machine Learning — Copenhagen, Denmark
Focus: MPC, Homomorphic Encryption, Federated Learning and Differential Privacy — *August 2022*

EXPERIENCE

Ph.D. Student in Privacy-preserving computer vision — Sept. 2021 – Present
Ghent University, Internet & Data Science Lab (IDLab)
Selected Projects:

Privacy-Aware Ergonomics with Contextual Privacy Protections
Developed privacy-preserving methods to allow multi-camera human keypoint estimation while protecting both personal and contextual privacy. In collaboration with Flanders Make.

- Presented research at the Flanders AI Research Day (500+ audience academia/industry)
- Led to a paper at the CIRP Design Conference and a submission to the CVIU journal.

Opt-in Vision for Industry
Evaluated our privacy-preserving computer vision framework on real-world data from woodworking and autonomous navigation.

- Collaborated with three industry partners to assess user needs and deployment requirements.
- Resulted in a an accepted paper at the AAAI Workshop on Human-Centric Manufacturing.

Teaching Assistant, Machine Learning — Sept. 2021 – Present
Ghent University, M.Sc. in Information Engineering Technology
- Guided approximately 60 students in labs and projects focused on practical machine learning applications.
- Designed assignments including hand-gesture recognition with Sony DepthSensing cameras and sports activity recognition.

TECHNICAL SKILLS

Programming Languages: Python, Java, C/C++, Javascript
Technologies: PyTorch, Pandas, Scikit-Learn, OpenCV, Tensorflow, Weights & Biases, Matplotlib, LaTeX, Docker, Git
Languages: English (Professional), Dutch (Native), French (Basic)

Selected Publications

[1] **De Coninck, Sander**, E. Gamba, B. Van Doninck, *et al.*, "Enabling privacy-aware ai-based ergonomic analysis", *Procedia CIRP*, vol. 136, pp. 371–376, 2025, 35th CIRP Design 2025, ISSN: 2212-8271.

[2] **De Coninck, Sander**, S. Leroux, and P. Simoens, "Exploring correlated facial attributes in text-to-image models: Unintended consequences in synthetic face generation", in *Proceedings of the Winter Conference on Applications of Computer Vision (WACV) Workshops*, 2025, pp. 1392–1401.

[3] **Sander De Coninck**, E. Gamba, B. V. Doninck, *et al.*, "Securing workers and workspaces: Contextual privacy for vision-based ergonomics", *Computer Vision and Image Understanding*, 2025, Under review.

[4] **De Coninck, Sander**, S. Leroux, and P. Simoens, "Mitigating bias using model-agnostic data attribution", in *2024 IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops (CVPRW)*, 2024, pp. 235–243.

[5] **De Coninck, Sander**, W.-C. Wang, S. Leroux, and P. Simoens, "Privacy-preserving visual analysis: Training video obfuscation models without sensitive labels", *Applied Intelligence*, pp. 1–12, 2024.

[6] W.-C. Wang, **De Coninck, Sander**, S. Leroux, and P. Simoens, "An opt-in framework for privacy protection in audio-based applications", *IEEE Pervasive Computing*, vol. 21, no. 4, pp. 17–24, 2022.