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.*

Master in Information Engineering Technology — Ghent University
Graduated Summa cum laude — *Sept. 2017-July 2021*

Experience

Enrichment Project: Opt-in Vision for Industry — 2025
Flanders AI Research Programme

- Evaluated a privacy-preserving ML framework on real-world data from two industry partners in woodworking production and autonomous vehicle navigation.
- Collaborated with partners to assess user needs and deployment requirements.
- Resulted in a submission to the AAAI Workshop on Human-Centric Manufacturing.

Privacy-Aware Ergonomics with Contextual Privacy Protections — 2024–2025
Flanders AI Research Programme (with Flanders Make)

- Applied privacy-preserving methods to multi-camera human keypoint estimation, protecting both personal and contextual privacy.
- Developed filtering techniques to obscure objects revealing proprietary information.
- Led to an accepted paper and presentation at the CIRP Design Conference and a submission to *Computer Vision and Image Understanding (CVIU)*.

Teaching Assistant, Machine Learning — Jun 2021 – Present
Ghent University, M.Sc. in Information Engineering Technology

- Guided students (≈ 60) in labs and projects focused on practical ML applications.
- Developed assignments including hand gesture recognition with Sony DepthSensing cameras and human activity recognition tasks.

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] **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.

[4] **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.

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)