

François WIECKOWIAK

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CIFRE PhD Student and R&D Engineer

LIRIS (INSA Lyon, France)

Luminess (Lens, France)

*Specialized in document understanding and mathematical OCR,
with research published at ICDAR and experience deploying AI
solutions for the European Patent Office publication pipeline.*

Education

- **CIFRE PhD Student - R&D Engineer** September 2023 - September 2026 (ongoing)
Luminess / LIRIS - Lens / Lyon, France
Improving Mathematical Expression Recognition Accuracy for Patent Publication
Artificial Intelligence, Document Understanding, Computer Vision, Optical Character Recognition, Multimodal Evaluation
- **Master of Science in Robotics** September 2021 - September 2022
University of Bristol and University of the West of England - Bristol, UK
with Distinction
Computer Vision, Robotic Systems, Artificial Intelligence, Human-Robot Interaction, Research Methodology
- **French Engineering Degree** September 2019 - September 2022
Arts et Métiers - Lille, France
Artificial Intelligence, Mathematics and Computer Science, Mechanical Engineering, Electrical Engineering, Industrial Engineering

Professional and Academic Experience

- **Research and Development Engineer** November 2022 - September 2026 (ongoing)
Luminess - Lens, France
 - Investigated recurring issues and improvement opportunities in patent production by interviewing the production teams in France and Romania
 - Developed and integrated mathematical expression recognition models, assisted data-entry tools, and automatic verification solutions into industrial patent conversion workflows, contributing to the required 99.99% conversion accuracy
- **Research Thesis in Robotics and Computer Science** May 2022 - September 2022
Bristol Robotics Laboratory - Bristol, UK
 - Developed a laser scanning algorithm for crack detection and repair in robotic welding
 - Integrated the laser scanning system and generated repair trajectories on a UR5 robot for repair planning in hazardous environments

Selected Publications

- **PatentME : A Dataset and Reference-Free Post-OCR Verification Task for Printed Mathematical Expression Recognition** *International Conference on Document Analysis and Recognition (ICDAR 2026)*, Vienna, Austria, 2026, [hal-05660080](#)
Recipient of the Best Presentation Award for this contribution at SIFED 2026, Rouen, France
- **A Multimodal Evaluation Pipeline for Mathematical Expression Recognition : Comparisons of Datasets, Metrics, and Models** *International Conference on Document Analysis and Recognition (ICDAR 2025)*, Wuhan, China, 2025, [hal-05172571](#)

Technical Skills

- **AI & Computer Vision** : PyTorch, TensorFlow, Hugging Face Transformers, OCR, Document Understanding, Multimodal AI
- **Software & Tools** : Python, Git, Docker, Linux, VS Code, RoboDK, Arduino, CAD
- **Languages** : French (Native), English (Fluent, IELTS 7.5, CEFR C1), German (Intermediate, CEFR B1)

Interests

- **Endurance Sports** : Bikepacking, Ultra-distance cycling, Triathlon
- **Creative** : Role-playing, Game development, 3D Printing
- **Coffee Science** : Science and methods behind coffee brewing