MIKKEL SKOVDAL

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EDUCATION

KU Leuven   Leuven, Belgium
MSc Applied Informatics: Artificial Intelligence   *Sep. 2022 – Jun. 2024*

UCLL   Leuven, Belgium
PBa Information Technology   *Sep. 2018 – Jun. 2021*

EXPERIENCE

AI Engineer   Jan. 2025 – Present
Freelance   *Leuven, Belgium*

- Contributing to the development of a 3D U-Net model for lesion segmentation on PET and CT imaging, as part of the autoPET IV challenge.
- Consulting on the continuation of my thesis project at Imec, focused on the deconstruction and documentation of Integrated Circuits from large images.

Data Engineer   Sep. 2023 – Nov. 2024
TechWolf   *Ghent, Belgium*

- Developed and researched advanced NLP models, including transformer-based Multi-Lingual Skill Taggers (MLST), to enhance TechWolf's Skill Intelligence platform.
- Developed ETL pipelines using PySpark, GCP Dataflow, BigQuery, and the Azure Data Platform for processing large-scale skill and vacancy data, enabling efficient model training and data enrichment.
- Authored a VLAIO Baekeland PhD proposal focusing on "Dynamic representations for modeling career trajectories" investigating sequential transformer models and temporal dynamics to overcome limitations of static skill representations.
- Contributed to research on human-centric AI, model explainability, and benchmarking strategies for HR use cases (proficiency, workforce planning, career pathing) in alignment with GDPR and EU AI Act principles.

Research Intern   Jul. 2023 – Oct. 2024
Imec   *Leuven, Belgium*

- Designed and developed a novel Interactive Machine Learning platform to automatically deconstruct integrated circuits.
- Implemented an end-to-end pipeline with custom object detection models for identifying intricate parts.
- Built a human-in-the-loop verification system allowing engineers to visually inspect and correct AI predictions, feeding validated data back for model improvement.
- Built an automated retraining system; demonstrated model performance increase and reduced documentation time.

Software Engineer   Sep. 2022 – Dec. 2022
KU Leuven   *Leuven, Belgium*

- Developed an interactive educational website with Javascript to visualize fundamental AI algorithms (Minimax, Dijkstra, Policy Iteration, SVMs).
- Teach students through real-time interactive demos of machine learning algorithms.

AI Engineer   Aug. 2021 – Sep. 2022
DotDash   *Leuven, Belgium*

- Developed a custom Grafana plugin using Cypher for real-time monitoring of Neo4j graph databases.
- Built a real-time anomaly detection pipeline leveraging PySpark Streaming, Kafka, and MQTT for processing data streams.
- Created a job recommendation platform PoC with Django.

Software Engineer Intern   Feb. 2021 – Jun. 2021
Roborana Group   *Kontich, Belgium*

- Developed UiPath components and Python scripts to integrate AI models into RPA workflows, automating business processes.
- Created an end-to-end forecasting system using ECDC public data, featuring daily automated model retraining to predict European vaccination trends.

PROJECTS

Roundnet Noorderkempen - Website & Management | *HTML, CSS, JS*   Jun. 2022 – Now
- I built and maintain a responsive <u>website</u> for my friends and mine Roundnet club.

Best Pitch at LSTAT Datathon in Leuven, Belgium | *Pytorch, Diffusion Models*   Feb. 2023
- Developed and trained a text-to-image diffusion <u>model</u> on a proprietary art dataset from scratch.

Winner Project Week in Kolding, Denmark | *HTML, CSS, JS*   April. 2020
- Audiobook that narrated Norse mythological stories used for a marketing campaign

Patent for Emotion Detection System in Chandigarh, India | *OpenCV, TensorFlow*   Feb. 2019
- Deep learning program that identifies human emotions. Model trained on the VGG face dataset with TensorFlow.

TECHNICAL SKILLS

Languages: Python, SQL, Java, JavaScript, C++
AI / ML: PyTorch, Scikit-learn, Transformers, LLMs (GPT-2, Bert, Fine-tuning), Diffusion Models, Object Detection (YOLOv7), OpenCV, ONNX, LangChain, Pandas, NumPy, IML
Data Engineering: PySpark, Kafka, MQTT, Google Dataflow, ETL Pipelines, Data Streaming
Cloud Platforms: AWS (Bedrock, S3), Azure (Data Factory, Synapse), GCP (Vertex AI, BigQuery, GCS, Dataflow),
MLOps / DevOps: Docker, Kubernetes, Git, GitLab CI/CD, GitHub, JIRA
Databases & Monitoring: Neo4j, BigQuery, Grafana
Frameworks & UI: PyQt, Streamlit, FastAPI, Flask, Django
Other Tools: KLayout, UiPath

LANGUAGES

Dutch - C2
English - C2
French - B2
Danish - B1
Portuguese - B1

REFERENCES

Jens-Joris Decorte   TechWolf
Founders Associate   *jensjoris@techwolf.ai*

Murat Kocak   Imec
Artificial Intelligence Researcher   *Murat.Kocak@imec.be*