Mikkel Skovdal

+32471117922 | mikkel2112@gmail.com | linkedin.com/in/mikkel-skovdal | github.com/dendeen

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

Data Engineer — Sep. 2023 – Nov. 2024
TechWolf — *Ghent, Belgium*
- Worked on the development of transformer-based MLST (Multi-Lingual Skill Tagger) models.
- Developed scalable skill data ETL pipelines using PySpark, Dataflow, and BigQuery for efficient data loading and model training.
- Pursued a Baekeland PhD grant to explore innovative solutions for job market representation modeling.

Research Intern — Jul. 2023 – Sep. 2024
Imec — *Leuven, Belgium*
- Developed YOLO object detection models for processing high-resolution layout images.
- Utilised OpenCV and PyTorch for feature extraction and image preprocessing.
- Designed an automated metrology data-mapping pipeline, reducing manual analysis time.

Software Engineer — Sep. 2022 – Dec. 2022
KU Leuven — *Leuven, Belgium*
- Created a website to visualise AI algorithms for the 'Artificial Intelligence' course.
- Covered topics such as minimax, Dijkstra's algorithm, and support vector machines.

Software Engineer — Aug. 2021 – Sep. 2022
DotDash — *Leuven, Belgium*
- Developed a Grafana plugin for real-time monitoring of Neo4j databases.
- Built an anomaly detection pipeline using PySpark, Kafka, and MQTT to flag outliers in live data streams.
- Designed real-time data streaming solutions with Apache Kafka and Spark Structured Streaming.
- Developed a knowledge graph chatbot using GPT-2 fine-tuning for natural responses.

Software Engineer Intern — Feb. 2021 – Jun. 2021
Roborana Group — *Kontich, Belgium*
- Developed a UiPath plugin to integrate AI models into automated workflows.
- Created an end-to-end forecasting system that retrained a model daily to predict European vaccination numbers using ECDC public data.

Projects

Automatic Semiconductor Layout Documentation Generation | *Python, PyTorch, YOLO, OpenCV* — Jul. 2023
- Developed an automated documentation pipeline for semiconductor layouts using YOLO-based object detection.
- Implemented OpenCV-based feature extraction and classification to generate structured layout reports.
- Optimised data preprocessing techniques for high-resolution image processing, reducing manual documentation efforts.

LStat Datathon - AI Artwork Generation | *Python, Diffusion Models, AI* — Feb. 2023
- Developed a text-to-image diffusion model trained on a proprietary art dataset.
- Created a pipeline to generate high-quality artwork based on textual prompts.

Anomaly Detection in IoT Data | *Kafka, PySpark, MQTT, Grafana* — Sep. 2022
- Designed a streaming pipeline for real-time anomaly detection in IoT sensor data.
- Implemented Grafana dashboards to visualise streaming data and detected anomalies.

GPT-2 Chatbot with RAG for Neo4j Wikidata | *Neo4j, GPT-2* — Jun. 2022
- Developed a chatbot utilising GPT-2 with retrieval-augmented generation for grounded knowledge graph-based responses.
- Integrated Neo4j and Wikidata to enable contextualised responses with structured knowledge representation.
- Optimised retrieval mechanisms for entity recognition and knowledge graph traversal, improving response accuracy.

Technical Skills

Languages: Python, SQL, Java, C++, JavaScript
Frameworks & Tools: PyTorch, Kafka, PySpark, FastAPI, Flask
Databases & Monitoring: Neo4j, Grafana, BigQuery
Developer Tools: Docker, Git, Kubernetes, Azure, GCP, Dataflow, Vertex AI
Libraries: pandas, Sklearn, NumPy, Matplotlib, OpenCV, LangChain

References

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

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