

Hani Yousfi

Senior Engineer



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📍 Stockholm, Sweden

An enthusiastic Data/Software Engineer passionate about cutting-edge technologies and solving real-world problems with over 5 years of experience in Software Engineering, Artificial Intelligence and Data Engineering. I have been collaborating with international clients in domains like Fin-Tech, E-Business, Sports, Healthcare, Robotics and developing high quality solutions that help automate their business and increase their income. Highly skilled team member who is able to provide end to end solutions using the latest technologies.

Education

Masters in Telecommunication Engineering (2015 - 2018)

Enet'Com-Sfax University, Tunisia

Preparatory Cycle for Engineering Studies (Maths-Physics) (2012 - 2015)

FSM-Monastir University, Tunisia

Work Experience

R&D Engineer

Novel-Ti, Tunisia

2018-09 – 2021-07

Artificial Intelligence - Computer Vision

Tasks/ Achievements

Provide our clients with solutions to monitor, automate and expand their business. My contributions were the following:

- **Developed a Deep Learning Optical Character Recognition System for a French client**
 - Worked with the Architects to design the architecture of the system
 - Processed and labelled the datasets provided by the client
 - Built and trained several classification and detection

- models for the provided documents using Transfer Learning
- Developed the system extracting the text from the processed documents using Recurrent Neural Networks and LSTM
- Applied post-processing techniques to clean the extracted text
- Deployed the system as REST API using Django, PostgreSQL, Docker and Nginx
- Prepared the test cases for the API

- **Teamed up with R&D team to build a Real-Time Goal Line Detection System based on the FIFA criteria**
 - Collected and labelled data from videos and images
 - Implemented football detection models with Neural Networks
 - Optimized and accelerated the built models using Cuda and TensorRT
 - Integrated the football localization using depth map and LiDARs
 - Handled the data acquisition and communication between the system parts using asynchronous tasks
 - Connected the system to a distant server to save the processed data and the results for further analysis
- **Developed real-time advanced lane-finding and obstacle avoiding algorithms for autonomous robot for a multinational client**

- Trained efficient line detectors using YOLO algorithm
- Optimized the algorithms to run in extreme conditions (darkness, high luminosity, distortion, ...) and on specific hardware
- Tested the performance of the solution before deployment
- **Train Deep Learning models to detect and track body parts in video games dedicated for children with special needs**
 - Integrated pose detection models to monitor body movements and balance using Pytorch
 - Upgraded the models' inference with Nvidia-TensorRT
 - Supported the project team to prepare the infrastructure for the app
- **Designed and built a Text Analysis System (Before LLMs existence)**
 - Processed the input text using NLTK and Regex
 - Set up a text summarizer with Spacy using the Extractive Approach
 - Extracted Named Entities (persons names, places names, organizations, ...) from the input text using HaNLP.
 - Interpreted the different relationships between the characters in the text based on sentiment analysis algorithms
 - Generated a comprehensive visualized network graph representing the relations between the different characters

IT Consultant, Machine Learning Engineer

Aigometri AB, Sweden

2021-08 – 2022-04

Artificial Intelligence – Software Engineering

Tasks/ Achievements

Helped our clients automate their business and set up ETL pipelines. My contributions were the following:

- **Assisted team mates with AI part of an internal project**
 - Provided outputs from DL algorithms for decision making integrations
 - Tested the metrics of several ML algorithms and recommended the most efficient and performant algorithms

- Helped the test engineers in establishing the test platform
- **Designed and developed a system to store employment requests for a client**
 - Designed the database architecture and data models
 - Created connections to Google cloud platform to fetch the stored data
 - Built the ETL pipelines
 - Developed unit and integration tests for the system
 - Used Jenkins pipelines and jobs for continuous integration and deployment of the project

Data Engineer

Klarna Bank AB, Sweden

2022-05 – 2023-05

Data Engineering – Software Engineering

Tasks/ Achievements

Design and build data pipelines, data warehousing and providing Analysts/customers with data needed for their business. My contributions were the following:

- **Built ETL pipelines**
 - Conducted thorough analysis of departmental data structures and sources.
 - Redesigned and built the ETL pipelines for a better performance
 - Managed various integrations with third-party systems to maintain smooth data flow
 - Worked closely with analysts to develop interactive dashboards and help the executives take better decisions

Software Engineer

Klarna Bank AB, Sweden

2023-05 – 2024-05

Software Engineering – LLMs

Tasks/ Achievements

Design and build LLM-based systems. My contributions were the following:

- **Developed an LLM-based feedback system**
 - Developed a first MVP for the CXOs
 - Assisted with migrating the prototype code from Flask to FastAPI

- Helped in setting up the LLM agents' workflow
- Set up the system infrastructure (AWS configuration, CI/CD pipelines, VPC and networking rules)
- Worked on the authentication using Okta
- Led discussion with the security teams to evaluate users' confidentiality and anonymity and built encryption services for users' data
- **Built a visualization system for the feedback tool**
 - Structured the data and stored it in a vector database
 - Process and analyze the data using LLMs
 - Assisted in building a web interface with interactive visualizations about the insights from the data
- **Data Analysis Frameworks/Libraries:** Pandas, Numpy, PySpark, matplotlib
- **WebDev Frameworks/Libraries:**
 - *Back-end:* FastAPI, Flask, Django
 - *Front-end:* React JS
- **ORMS:** SQLAlchemy
- **Testing:** Pytest
- **AI Frameworks/Libraries & tech:** TensorFlow, OpenCV, Keras, Pytorch, GenAI, LLMs
- **Infrastructure As Code:** Terraform

Senior Software Engineer

Klarna Bank AB, Sweden

2024-01 – Ongoing

Software Engineering – System Architecture

Tasks/ Achievements

Working on centralizing the organization internal data.

My contributions were the following:

- **Redesign and centralize the organization internal data**
 - Collaborated with other teams and architects to set the requirements for the project
 - Helped in setting the architecture of the ETL (Extract, Transform, Load) pipelines
 - Designed data models for the data to be loaded from various systems
 - Deployed the ETL systems to facilitate the data migration process
 - Worked closely with different services providers to keep aligned about the integrations' requirements

Technical Skills

- **Programming Languages:** Python, JavaScript
- **OS:** Linux
- **Version Control:** Git
- **Databases:** MySQL, PostgreSQL, Redshift
- **CI/CD:** Jenkins
- **Containerization:** Docker
- **Cloud:** AWS
- **Workflow automation:** Apache Airflow