

# Manuel Pasieka

I am a builder, entrepreneur, and AI Consultant that makes AI work for you.

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## Skills & Tooling

- **Software Development:** Python, C, R, Matlab, δRust
- **Data Science:** Natural Language Processing (NLP), Deep Learning (Keras, PyTorch), Data Visualization (matplotlib, plotly, Tableau), Vector Databases, Language Model training and fine-tuning
- **Data Engineering:** pyspark, pandas, airflow, Celery, Luigi, PostgreSQL, redis, AWS redshift, Azure AI Search, FastAPI
- **Dev/MLOps:** Docker, Terraform, Kubernetes, MLFlow, AWS SageMaker OpenTelemetry, FastAPI
- **Cloud:** AWS, Azure

## Professional Experience

### Kapsch TrafficCom AG – AI Consultant

05/2024 – present

As an AI Consultant at Kapsch TrafficCom AG, I am responsible for identifying business processes that can benefit from cutting-edge AI technologies like LLMs (Language Model Models) to enhance capabilities and reduce costs. My role involves:

- Analyzing the potential of LLMs in existing business processes.
- Evaluating and estimating the technical feasibility and effort required to implement prototypes.
- Identifying innovative use cases for LLMs to drive business growth and efficiency.

### CANCOM Austria AG – AI Solution Architect

05/2024 – present

In my position as an AI Solution Architect at CANCOM Austria AG, I work within a development team to create an AI agent platform for various internal and external LLM powered knowledge management use-cases. My responsibilities include:

- Designing and develop an extendable python-based agent platform.
- Leveraging Azure AI Search for efficient information storage and retrieval.
- Use Azure OpenAI deployed models for inference at scale.
- Implement customer specific platform modifications.

### Pallas – Founder

06/2023 – 05/2024

Pallas is a Knowledge Management System that helps companies to make most of their documentation. Pallas is achieving this with a scalable Retriever Augmented Generation (RAG) system that operates autonomous on-premises or in a company's virtual private cloud (VPC). This provides companies with control and safety over their precious internal knowledge, while accelerating finding and using important information and documents within the company.

- Scalable containerized microservice architecture
- Integration of multiple knowledge bases (Confluence, SharePoint, FileServers, ...)
- Hybrid search and information Retrieval using Document and Query expansion



- Efficient use of open-source large language models for Question and Answering

## **Technologies & Methods**

Python, Docker, Kubernetes, Vector Databases, Qdrant, Open Telemetry, Jaeger, Celery, Redis, PostgreSQL, Large Language Models (LLM), Model quantization, vllm, TGI, Embedding and LLM fine-tuning.

### **Motius GmbH – Tech Lead & Data Engineer**

**04/2022 – 04/2024**

As Tech lead and Senior Data Engineer I am building with my team a spare part observability platform that Siemens customers use to understand and optimize their spare part supply chain.

- Developing a cloud focused system architecture to enable the deployment of a Django based backend on AWS spot instances.
- Rearchitecting the data processing backend to increase system reliability.
- Developing a multi-tenant data processing solution that enables scale to zero
- Extending data models and optimizing database access performance

### **CARIAD – Tech Lead & Data Engineer**

**04/2022 – 06/2023**

As Tech lead and Senior Data Engineer I am with my team, developing an analytics platform that uses voice analysis to understand the interests and demands of customers when interacting with customer support. Extracting product and brand relevant information to understand their usage and sentiment in customer interactions with the goal to populate a dashboard for business analysts.

- Developing and maintaining a voice analytics pipeline running on AWS
- Developing and maintaining the request backend for a Voicify based mobile voice control application
- Speech to Text transcription based on cloud vendor and custom build solutions
- Topic modeling
- Named Entity and Relation extraction and aggregation
- Building a Tableau based dashboard for business analysts

### **Brantner Digital Solutions GmbH – AI Architect**

**05/2022**

Developing a concept and prototype to extend a machine learning training pipeline to be able to track the datasets that are used for model re/training.

- Building a dataset manifest
- Tracking model retraining with MLFlow
- Visualizing and comparing models based on their model performance

### **mySugr GmbH – AI Consultant**

**03/2023 - 06/2023**

As an AI Consultant I perform training and develop with the customer use cases of Large Language Models (i.e. GPT) for internal process automation.

- Employee training on fundamental concepts of Large Language Models
- Development of LLM use case for process automation
- Feasibility study and PoC design

- MOSTLY.AI - Senior Machine Learning Engineer** **06/2020 - 04/2022**  
 Building the world's best synthetic data generation engine that protects the privacy of individuals without sacrificing data quality. As a Senior Machine Learning Engineer, I was responsible in developing new encoding types, improving existing ones and building internal tooling for reproducible model training.  
 In customer PoC's, I was responsible for providing technical guidance and resolving issues as well as answering product related questions.  
 For internal and customer satisfaction I was developing training material that focuses on the ML aspects of our product. Junior data scientists I supported with supervision, onboarding, and training.
- Craftworks GmbH - Data Scientist** **01/2020 - 04/2020**  
 Solution focused development of data science projects for customers from various industries.
- Vienna Biocenter Core Facilities - Scientific Software Engineer** **06/2012 - 10/2019**  
 Developing data analysis applications used by neuroscience researchers, like applications to automatically quantify and analyze animal behavior, and software to process and analyze neuronal activity.
- Developing hardware control software for behavior experiments
  - Building tooling for data processing and visualization
  - Creating network analysis tools for structural and behavioral neural measurements
  - Building data analysis pipelines for animal behavior classification
- Universidad Politécnica de Valencia - Research Assistant** **09/2011 - 10/2012**  
 Developing a simulation environment controlled by a stationary replica of an autonomous vehicle.
- Adaptivia GmbH - Embedded System Engineer** **06/2007 - 09/2010**  
 Development of 16-bit low power SoC embedded system devices for wireless underground sensor networks.
- Entrepreneurship**
- Pasieka AI Solutions GmbH – CEO** **04/2024 - present**  
 Pasieka AI Solutions GmbH provides AI consultancy and tailored AI software solutions. We help companies to identify how to leverage AI for their business and how to make AI work for them.
- Strategic AI consultancy
  - Method development and technology selection
  - AI Product and Prototype development
- Entrepreneurship & Leadership Program (Austrian Startups) - Participant** **09/2023 – 06/2024**  
 The Entrepreneurial Leadership Program is a community for those who go and build rather than complain about problems. It's a one-year immersive program centered around startup-skills, leadership development and mutual support.
- Founders Lab (Wiener Wirtschaftskammer) - Participant** **06/2023 – 12/2023**  
 The Founders Lab is an Entrepreneurship Program focuses developing the essential Skills and Network to start Founders on their journey of building a modern startup.
- Austrian Artificial Intelligence Podcast – Founder & Host** **04/2021 – present**

I regularly invite speakers from academy and industry to talk about their work and research in the field of Artificial Intelligence to explore the Austrian AI Landscape and learn about interesting methods and use case.

## Certifications

- AWS Certified Cloud Practitioner certification: [Verification Link](#)

## Publications

- Pliota, P., Böhm, V., Grössl, F., Griessner, J., Valenti, O., Kraitsy, K., Kaczanowska, J., **Pasieka, M.**, Lendl, T., Deussing, J. M. and Haubensak, W. (2018) 'Stress peptides sensitize fear circuitry to promote passive coping', *Molecular Psychiatry*.
- Dr. Johannes Griessner, **Manuel Pasieka**, Mr. Vincent Boehm, Mr. Florian Grössl, Mrs. Joanna Kaczanowska, Dr. Pinelopi Pliota, Mr. Dominic Kargl, Ms. Barbara Werner, Dr. Nadia Kaouane, Ms. Sandra Strobelt, Dr. Silke Kreitz, Prof. Andreas Hess and Haubensak, W. (2018) 'Central amygdala circuit dynamics underlying the benzodiazepine anxiolytic effect', *Molecular Psychiatry*.

## Education

- Master in Artificial Intelligence, 2018-2019, Universidad Internacional de La Rioja, Spain
- Master in Parallel and Distributed Computing, 2010-2012, Universidad Politécnica de Valencia, Spain
- Bachelor's in Computer Science, 2005-2009, Technical University of Vienna, Austria