

Julius Haas

AI Expert & Automation Engineer

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Julius is an AI expert and automation engineer with 10+ years' experience, former Head of Machine Learning & GenAI at Germany's largest IT service provider, and an international AI conference speaker.

Leadership & Business Impact

- Established and led the GCP ML & Data team at adesso SE (>10,000 employees, €1.3 bn revenue)
- Strategic leadership of the "Google Cloud" Competence Center for ML & GenAI
- Developed 10+ production-ready AI solutions across 5+ industries
- Project responsibility for >€500,000 project volume, including C-level communication
- Technical leadership, mentoring & onboarding of 5+ ML/Data/Software Engineers

Conferences

- [2025 - Cities in Conversation: Bengaluru meets Hamburg - Bengaluru, India](#)
- [2025 - Building AI Solutions - Handelskammer Hamburg, Germany](#)
- [2024 - EL AI Seminar - Warsaw, Poland](#)
- [2023 - adesso Data Day - Frankfurt, Germany](#)
- [2022 - adesso sumMIT - Belek, Turkey](#)
- [2022 - MIDL \(Medical Imaging with Deep Learning\) Conference - ETH Zurich, Switzerland](#)
- [2019 - 5th International StartUp Conference - Busan, South Korea](#)

Panels, Workshops & Discussions

- [2025 - True Beacon Investment Firm, AI Discussion - Bengaluru, India](#)
- [2024 - AI Leadership Roundtable - Bengaluru, India](#)
- [2024 - BigQuery Workshop - Hamburg Google Office, Germany](#)

Selected Projects *(additional projects on page 4)*

- **FUNKE Mediengruppe (2025):**
Integration of Google ADK with FUNKE AI Platform (Open WebUI, LiteLLM, etc.), including Vertex AI Agent Engine and Cloud Run deployments, CI/CD, Terraform, and several agentic use cases.
- **BBN AI Studio (2025):**
Development of an AI platform including multi-agent systems with LangGraph, LangSmith.
- **RAG-based Chatbot & Enterprise Systems (2024):**
Model-agnostic chatbot with enterprise-grade agents and workflows; features semantic search, reranking, LangGraph orchestration, Streamlit UI; deployed on Cloud Run & Vertex AI.
- **Streaming Data Platform for Energy Trading (2024):**
Google Cloud-native architecture for real-time data processing in ML-based energy trading, BigQuery, ETL pipelines (Dataflow) & data governance.
- **Object Detection for Lottery Tickets (2022–2023):**
Deployed across 200+ branches; showcased at World Lottery Summit (Vancouver, Las Vegas).

Selected Publications

- *Deep Learning for Cell Culture Analysis* - (peer-reviewed, MIDL2022 Conference, ETH Zurich) - [LINK](#)

Professional Experience

Freelance | **AI Expert, AI Engineer, Google Cloud Engineer**

12/2024 – PRESENT, HAMBURG

- Strategic consulting on the use of Artificial Intelligence, Generative AI, and Machine Learning (ML).
- End-to-end development and deployment of ML and GenAI prototypes in the cloud, including deployment and operation using LangGraph platform, LangSmith, and LangChain.
- Consulting and support for migrating existing systems to Google Cloud.
- Conducting training and coaching in ML, GenAI, data analysis, and cloud technologies.

adesso SE | **Head of Machine Learning & GenAI - Google Cloud**

04/2024 – 11/2024, HAMBURG

- Strategic leadership of the "Google Cloud" Competence Center for ML, Data, and GenAI.
- Led technical workshops on GenAI, ML, data, and Google Cloud products; keynote speaker at international conferences (Turkey, Poland, Germany).
- Responsible for the strategic direction of the Competence Center "Google Cloud" in ML and GenAI.
- Led interdisciplinary development teams for projects in ML, computer vision, GenAI (LLM/RAG/chatbots), and cloud infrastructure.
- Supervised master's theses in AI.
- Conducted technical assessments in GenAI, ML, Data & Software Engineering during interviews.

adesso SE | **Senior Machine Learning Engineer / Data Scientist**

01/2024 – 04/2024, HAMBURG

- Led the development of data processing systems and scalable ML workflows for production systems.
- Developed, trained, and deployed ML models using automated MLOps and CI/CD pipelines.
- Implemented and deployed containerized microservices (e.g., APIs, Data Fetcher).
- Mentored junior engineers on best practices for data engineering and model deployment.

adesso SE | **Machine Learning Engineer / Data Scientist**

09/2022 – 12/2023, HAMBURG

- Developed scalable data pipelines and automated ETL pipelines.
- Designed end-to-end workflows from feature engineering to model deployment.
- Integrated cloud infrastructure for ML model deployment and monitoring.

adesso SE | **Junior Machine Learning Engineer / Data Scientist**

03/2022 – 08/2022, HAMBURG

- Built and maintained data pipelines to support ML and data analysis.
- Responsible for various data science and ML engineering tasks (feature engineering, model development, training, deployment, monitoring, and evaluation).
- Developed multiple proofs of concept (PoCs), evaluated models, and contributed to larger projects, some of which went into production.
- Optimized data storage and access using cloud-based tools.

myBuddy gUG | **Plattform Manager**

10/2021 – 02/2022, MANNHEIM

- Managed the development and operation of the myBuddy online platform.

- Coordinated meetings with internal and external stakeholders.
- Enabled 500+ people to form new intercultural friendships.
- Supported the founder of myBuddy with various organizational tasks.

TH Köln, Gruppe Dr. Kim | **Research Assistant / Tutor in Statistics and Machine Learning**

01/2020 - 12/2020, COLOGNE

- Collaborated with academic staff and professors on various statistics and ML projects.
- Organized and managed examination processes for written and online exams in mathematics and business administration.
- Tutored students in descriptive statistics and probability for various bachelor's programs.
- Conducted intensive three-week mathematics preparation courses for new students.
- Created YouTube tutorials on descriptive statistics and probability during COVID-19.

eMotorsportsCologne | **Computer Vision / Machine Learning Consultant**

07/2019 - 12/2019, COLOGNE

- Provided consulting and support to the Driverless Team in developing computer vision solutions for lane detection in an autonomous sports car.
- Assisted in selecting appropriate hardware and software.

CALCE Institute, University of Maryland | **Research Assistant**

09/2017 - 02/2018, COLLEGE PARK, MD, USA

- Bachelor's thesis on the degradation mechanisms of aluminum electrolytic capacitors ("*Degradation Mechanisms of Aluminum Electrolytic Capacitors*").
- Evaluated the efficiency of reformation processes of the aluminum oxide dielectric in electrolytic capacitors.

Pepperl+Fuchs GmbH | **Working Student**

11/2016 - 02/2017, MANNHEIM

- Migrated the database of electronic components from P-CAD to OrCAD software.

EvoBus GmbH, Daimler AG | **Working student / Intern**

03/2016 - 08/2016, MANNHEIM

- Developed a VBA tool from scratch to filter, categorize, and visualize failure data.
- Conducted data analysis on global failure cases of batteries and generators for Mercedes-Benz buses.
- Identified failure patterns and underlying failure mechanisms.
- Manually inspected and evaluated failed components in collaboration with BOSCH GmbH.
- Contributed to high-voltage energy management for the Mercedes-Benz Electric Drive Bus.
- Performed function tests in both software-in-the-loop and test track environments.

All Projects

FUNKE Mediengruppe (Freelance) | **Development of an AI-Agents Platform with Google ADK – 2025**

- Integrated Google ADK with the existing FUNKE AI Platform (Open WebUI, LiteLLM, etc.).
- Setup workflow to implement new agentic use cases for production for 2000+ active daily users (Deployments with Cloud Run, CI/CD pipelines, and Terraform-based infrastructure)
- Implemented multiple agentic use cases and integrated them into production.

BBN AI Studio (Freelance) | **Development of an AI Platform – 2025**

- Consulted strategically on separating disruptive news from hype and what to integrate into the product portfolio.
- Developed an AI platform including multi-agent systems using LangGraph and LangSmith.
- Responsible for cloud deployment, integration, and implementation of production-ready agentic use cases.

Freelance | **Development of an AI Chatbot incl. RAG System with LangGraph & Streamlit – 2024**

- Conceptualized and implemented a model-agnostic chatbot with a modular structure.
- Used LangGraph to orchestrate multi-step workflows and agent logic.
- Integrated various LLMs (OpenAI, Google Gemini, Anthropic Claude, Mistral, etc.) for dynamic model selection depending on context.
- Connected company data in a vector database, including implementing semantic search and optimization via reranking.
- Implemented guardrails to control response behavior and ensure safe outputs.
- Developed a user-friendly interface using Streamlit.

adesso SE | **Development of Retrieval-Augmented Generation (RAG) Systems – 2024**

- Developed and implemented various RAG-based applications to integrate enterprise knowledge into generative AI systems.
- Used LangGraph to model complex multi-step workflows and agent management.
- Connected company-specific data sources via VertexAI indexes with semantic search and optimization through reranking.

adesso SE | **Streaming Data Platform for Algorithmic Trading with Machine Learning – 2024**

- Developed an event-driven, Google Cloud-native real/near-time data platform for processing streaming data for a leading German energy provider.
- Connected various data sources (Pull & Push) across different technologies (REST, SOAP, FTP, AWS SNS, WebSockets, etc.).
- Provided clean, unified data via a central endpoint for an unlimited number of internal users.
- Served as the technical foundation for algorithmic energy trading using machine learning.
- Built a BigQuery data warehouse and real-time data visualization.
- Supported the change process and co-designed the data governance strategy.
- Result: Saved approximately €3 per trade for several hundred trades daily.

adesso SE | **Deep Learning-Based Betting Slip Evaluation for a Major German Lottery – 2022-2023**

- Developed a microservice architecture and a robust API using Google Cloud Vertex AI models for object detection, custom classification models, and rule-based functions to extract and process relevant information from betting slip images.
- Google Cloud-native development with automatic scaling for high request volumes.

- The solution is currently operational in over 200 locations, with plans for expansion.
- The solution was presented at the World Lottery Summit 2022 in Vancouver, Canada, with potential for deployment in the Americas.

Fraunhofer IPT | **Classification and Segmentation of Stem Cells (Grade: 1.0) – 2021**

- Developed a modular deep learning pipeline for automated analysis of adherent cell cultures in confocal fluorescence microscopy images for researching strategies to improve the regenerative capacity of mammalian hearts.
- Compared 18 encoder-decoder model architectures for classification, segmentation, and quantification of mono- and binuclear cardiomyocytes.
- Conducted 127 experiments to examine data-related effects.
- Provided guidelines for the automated analysis of complex cell cultures, including cases with limited image counts and annotations.

TH Köln | **Machine Learning for the Prediction of Indoor Climate Quality (PMV) (Grade: 1.0) – 2020**

- Trained a feed-forward neural network (FFNN) for predicting empirical indoor climate quality (PMV).
- Automated the generation of a training dataset of over 100,000 data points for FFNN training.

TH Köln | **Machine Learning for Predicting COVID-19 Case Numbers (ungraded) – 2020**

- Generated a training dataset through integration of public APIs.
- Evaluated the training data (exploratory data analysis).
- Defined relevant features (feature engineering).
- Performed regression prediction of COVID-19 time-series data.

TH Köln | **Project “General Position” (Statistics) (Grade: 1.0) – 2020**

- Implemented a Python tool to calculate the probability that a given dataset falls under a general situation according to statistical criteria.
- Performed calculations with minimal computational resources through numerical approximation.

TH Köln | **Degradation Mechanisms of Electrolytic Capacitors (Grade: 1.0) – 2017-2018**

- Conducted literature research on degradation mechanisms of the dielectric aluminum oxide layer of electrolytic capacitors and possible reversals.
- Simulated the possible effects of reformation of the dielectric.
- Implemented a test setup to evaluate reformation.

TH Köln | **Range Optimization of a Photoelectric Barrier Transmission Unit (Grade: 1.3) – 2017**

- Designed and built a transmission unit for an existing photoelectric barrier.
- Optimized the operational range of the barrier using Fresnel lenses.
- Correlated the received transmission signal from a photodiode with the signal of a frequency-shifted quartz oscillator and displayed the frequency difference on a control LED.
- Result: The procedure resulted in a 200% increase in range.

Daimler AG | **Failure Cases of Daimler Diesel Buses at EvoBus GmbH (ungraded) – 2016**

- Implemented a VBA macro for automatic processing and visualization of customer data for warranty and goodwill purposes.
- Conducted research and fieldwork on failure cases of generators.

- Installed a measurement setup with humidity, temperature, and leakage current sensors in a test vehicle.

Education

Technische Hochschule Köln | **M.Sc. Electrical Engineering – Automation**

(Master Thesis: 1.0, Final Grade: 1.3)

09/2018 – 09/2021, COLOGNE

Soongsil University | **Statistics and Machine Learning** (as part of M.Sc. studies)

03/2020 – 07/2020, SEOUL, SOUTH KOREA

University of Maryland | **CALCE Institute** (as part of B.Sc. studies)

09/2017 – 02/2018, COLLEGE PARK, MD, USA

Hochschule Mannheim | **B.Sc. Communications Engineering – Electronics**

(Bachelor Thesis: 1.0, Final Grade: 1.8)

09/2013 – 03/2018, COLOGNE, GERMANY

Scientific Publications

Leyendecker, Haas, Piotrowski, Frye, Becker, Fleischmann, Hesse, Schmitt (2022):

Deep Learning for Analyzing the Proliferation of Postnatal Cardiomyocytes in

Confocal Microscopy Imaging Data (MIDL2022 Conference, ETH Zurich)

Techstack

Google ADK, LangGraph (Platform), LangSmith, smolagents, Tensorflow, scikit-learn, GCP SDK & VertexAI, Docker (+ Compose), CI/CD (GitHub & GitLab), Terraform, Python, Bash, C++, C

Certificates

- Google Certified Professional Machine Learning Engineer (2x)
- Google Certified Professional Data Engineer (2x)
- Fraunhofer IPT Image Recognition Seminar – Machine Learning in Production
- Stanford Online – Machine Learning Course by Andrew Ng
- University of California, Davis – SQL for Data Science