Saleh **MOZAFARI**
AI Solution Architect | Senior Data Scientist

linkedin.com/in/salehmozafari
+49 152 26988580 @ mozafari.dev@gmail.com
Gartenfelderstr. 63, 13599 Berlin, Germany

As a passionate AI enthusiast with over a decade of experience in data science and machine learning, I thrive on creating innovative, end-to-end AI solutions. My expertise spans across AI, Machine Learning, Computer Vision, and full-stack development, empowering me to design and deploy highly effective predictive models. Holding a Master's in Artificial Intelligence, I possess advanced skills in Python, C++, and cloud technologies. My proficiency in visualizing complex data insights, combined with exceptional cross-functional teamwork and communication abilities, allows me to excel in collaborative environments. My unique blend of technical development expertise and strategic problem-solving skills positions me as a key driver of digital transformation and operational efficiency, ready to tackle the most challenging AI projects.

Work Experience

Present
Sep 2018

Expert Data Scientist | Machine Learning Engineer – **WidasConcepts GmbH**, Wimsheim, Germany

Project: Cidaas-ID-Validator

- Designed and implemented a cutting-edge ML-based cybersecurity solution to enhance fraud detection mechanisms.
- Developed RESTful APIs for real-time fraud analysis, improving system responsiveness and threat mitigation.
- Spearheaded the creation of a CI/CD pipeline, optimizing the deployment and testing of machine learning models.
- Innovated a Smart Multi-Factor Authentication (MFA) system using a Fuzzy Inference System (FIS), adapting to varying risk levels for enhanced user verification.
- Conducted Causal Inference analysis to pinpoint the root causes of fraudulent activities, facilitating targeted preventive measures.
- Achieved a fraud detection accuracy rate of 97%, significantly reducing the platform's risk exposure.

Docker | Kubernetes | GitLab | DC/OS | Python | C++ | R | OpenCV | dlib | Ray | tesseract | ocrupy | Flask | Jupyter-notebook | numpy | scipy | pandas | matplotlib | seaborn | PyTorch | Pyro | Tensorflow | keras | scikit-learn | scikit-image | scikt-fuzzy

Present
2020

Lead Data Scientist | Machine Learning Engineer – **WidasConcepts GmbH**, Wimsheim, Germany

Project: Cidaas- FDS (Fraud Detection System)

- Led the development and deployment of scalable microservices to operationalize machine learning models, boosting system efficiency.
- Developed an OCR model for high-precision data extraction from identity documents, improving data retrieval accuracy.
- Engineered a security framework integrating Computer Vision and Probabilistic Graphical Models to detect fraudulent documents.
- Created an HCI application using eye-tracking methodologies for real-time liveness detection, setting new standards in identity verification technology.
- Played a key role in conceptualizing and implementing an MLOps framework, ensuring seamless model integration and continuous improvement of machine learning solutions.

MLFlow | scikit-learn | scikit-image | scikt-fuzzy | CausalInference | Docker | Kubernetes | GitLab | Python | R | FastAPI | Jupyter-notebook | numpy | scipy | pandas | matplotlib | seaborn | MongoDB | Elasticsearch | Kibana

2022 – 2020 | **Lead Data Scientist | Machine Learning Engineer** – **WidasConcepts GmbH**, Wimsheim, Germany

Project: Bosch-EBR (Experience-based Repair)

- Developed an NLP-based vehicle identification system using Named Entity Recognition (NER) and Graph Theory, enhancing component classification accuracy.
- Architected a RESTful API for efficient delivery of the vehicle identification model, improving system integration and user accessibility.
- Designed a robust stream processing framework using Faust, optimizing data handling processes and enhancing system scalability.
- Contributed to the creation of an LLM-based Concept Identification Service, leveraging large language models to mine discussions and identify solutions for vehicle issues, significantly improving diagnostic efficiency.

Python | NLTK | SpaCy | Gensim | Faust | FastAPI | Elasticsearch | Kibana

2019 – 2018 | **Data Scientist** – **WidasConcepts GmbH**, Wimsheim, Germany

Project: Porsche-CCD (Corner Case Detection)

- Engineered a spatio-temporal model utilizing internal sensory data and geolocation to detect corner cases, enhancing predictive capabilities and safety measures.
- Led the design of an interactive UI for real-time monitoring of Porsche cars using ReactJS, facilitating responsive data visualization and decision-making.
- Developed a high-performance data streaming system using MQTT and Tornado, ensuring efficient real-time data transmission and processing.
- Implemented advanced data visualization techniques with Plotly and Bokeh, enabling comprehensive understanding of complex data insights.

Python | ReactJS | Bokeh | Plotly | Tornado | MQTT | scikit-learn

2019 – 2018 | **Computer Vision Engineer | Data Scientist** – **WidasConcepts GmbH**, Wimsheim, Germany

Project: Chinese Painting Seal Assessment

- Developed a deep learning model using CNNs in TensorFlow to accurately identify artist seals, aiding in the authentication of artworks.
- Innovated a recurrent neural network model for assessing the originality of artists' seals, distinguishing genuine artifacts from forgeries, contributing to the preservation of cultural heritage.

Python | Tensorflow | Keras | RNN | CNN | OpenCV | scikit-image | scikit-learn | JupyteLab | Pillow

Aug 2018 – Sep 2014 | **Researcher and Developer** – **DFKI GmbH**, Kaiserslautern, Germany

- Modeled gaze movements within the Immersive Quantified Learning lab, advancing Human-Document Interaction research.
- Designed and implemented a Human-Computer Interaction system with eye-tracking technology for the AICASys Project, enhancing digital interface accessibility for individuals with disabilities.
- Developed a generative probabilistic model for synthesizing eye-movement patterns, contributing to more intuitive and adaptive systems.
- Contributed to academia as a Teaching Assistant for the Data Mining Course at TU Kaiserslautern, enriching student learning with practical insights.
- Supervised Master and Bachelor dissertations in AI and HCI, guiding students with innovative and real-world applicable mentorship.

KNIME | Python | C++ | R | Matlab | ZMQ | IoT | OpenCV | dlib | jupyter-notebook | numpy | scipy | pandas | matplotlib | seaborn | pillow | Edward | keras | scikit-learn | scikit-image | scikt-fuzzy | Git | TortoiseSVN

Aug 2014 – Nov 2013 | **Full-stack Developer** – **Yareegar Clinic**, Tehran, Iran

- Designed a comprehensive personality assessment project for MapnaGroup, developing a robust evaluation system for over 20,000 employees, enhancing workforce management.
- Demonstrated full-stack development skills by creating a dynamic portal for psychological assessments, using PHP for server-side logic and Python for data analysis, delivering efficient digital solutions.

Python2 | PHP | XAMPP | JavaScript | CSS | Autobahn|Python | TortoiseSVN | MySQL

Nov 2013 – Sep 2012 | **University Lecturer** – **Azad University**, Tehran (Roudehen), Iran

- Taught Machine Learning, Data Engineering, and Computer Vision to undergraduate Computer Science students, emphasizing theoretical and practical applications.
- Instructed postgraduate Clinical Psychology students in Data Analysis and Advanced Statistics, integrating statistical theories with hands-on data analysis for rigorous research.

Weka | Python | R | SPSS | Stata | Matlab

Education

2016 – 2018 **PhD in Artificial Intelligence** - Technische Universität Kaiserslautern (Not Completed)
Thesis Title: Towards Eye Movements Analysis in HumanDocument Interaction

2009 – 2011 **M.Tech in Artificial Intelligence (Computer Cognition Technology)** - University of Mysore, India
Thesis Title: Cancer Prediction Using Microarray Expression Data
GPA: 9.3 / 10 *(Distinction)*

2000 – 2004 **B. Sc in Software Engineering** - Azad-Universität, Iran
Graduation project: Developing an Interactive E-Learning Platform Using ASP.NET: Innovations in Digital Education
GPA: 15.13 / 20 *(Iranian Grading Scale)*

Skills

Programming Languages	**Python**, R, C, C++, JavaScript, Go
Libraries	**Numpy**, Scipy, **Pandas**, **scikit-learn**, scikit-fuzzy, scikit-image, **OpenCV**, dlib, **PyTorch**, Causal-Inference, Tensorflow, Keras, Statsmodels, Django, Flask, FastAPI, Sphinx
NLP and LLM	NLTK, SpaCy, Gensim, BERT, LangChain
Visualization Tools	**matplotlib**, **seaborn**, bokeh, plotly, ggplot2, Tableau
Databases	MySQL, PostgreSQL, MongoDB, GraphQL, Redis, Elasticsearch
IDEs	**PyCharm**, **Visual Studio Code**, Sublime-text, RStudio
MLOps Tools	**GitLab CI/CD**, **Docker**, Kubernetes, MLFlow, Apache Kafka
Operating System	Fedora, **Ubuntu**, MacOS, Windows

Honors and Awards

- Distinction student in Master of Computer Technology with GPA 9.3/10, University of Mysore, India.
- Best paper award in IAPR-HDI conference, Kyoto, Japan, Nov 2017.

Languages

English	Business fluent
German	Intermediate (B1 - Telc Zertifikat)
Persian	Native

Publications

1. **Saleh Mozafari**, Pascal Klein, Mohammad Al-Naser, Stefan Küchemann, Jochen Kuhn1, Thomas Widmann, and Andreas Dengel. Quantifying Gaze-based Strategic Patterns in Physics Vector Field Divergence. In Agents and Artificial Intelligence. Lecture Lecture Notes in Artificial Intelligence book sub series (LNAI). Springer International Publishing, 2021. (Under publication)
2. Pascal Klein, Jouni Viiri, **Saleh Mozafari**, Andreas Dengel, and Jochen Kuhn. Instruction-based clinical eye-tracking study on the visual interpretation of divergence: How do students look at vector field plots? In Physical Review Physics Education Research 14 (1), 010116, American Physical Society,2018.
3. **Saleh Mozafari**, Pascal Klein, Mohammad Al-Naser, Stefan Küchemann, Jochen Kuhn1, Thomas Widmann, and Andreas Dengel. Classification of Visual Strategies in Physics Vector Field Problem-solving. In Proceedings of the 12th International Conference on Agents and Artificial Intelligence - Volume 2: ICAART, 2020.
4. **Saleh Mozafari**, Pascal Klein, Jouni Viiri, Sheraz Ahmed, Jochen Kuhn, and Andreas Dengel. Evaluating similarity measures for gaze patterns in the context of representational competence in physics education. Proceedings of the 2018 ACM Symposium on Eye-tracking Research and Applications (ETRA), 2018.
5. **Saleh Mozafari**, Federico Raue, Saeid Dashti Hassanzadeh, Stefan Agne, Syed Saqib Bukhari, Andreas Dengel. Reading type classification based on generative models and bidirectional long short-term memory. International Conference on Intelligent User Interface (IUI), UISTDA Workshop, Japan, Tokyo, 2018.
6. Marc Beck, **Saleh Mozafari**, Syed Saqib Bukhari, Andreas Dengel. Landscape or Portrait? The Impact of Page Orientation on the Understandability of Scientific Posters. 14th IAPR International Conference on Document Analysis and Recognition

(ICDAR), 2017.

7. **Saleh Mozafari**, Mohammad Al-Naser, Syed Saqib Bukhari, Damian Borth, Shanley EM Alleny, Andreas Dengel. An eye movement study on scientific papers using wearable eye-tracking technology. 2016 Ninth International Conference on Mobile Computing and Ubiquitous Networking (ICMU), Kaiserslautern, Germany, 2016.
8. **Saleh Mozafari**, Pascal Klein, Syed Saqib Bukhari, Jochen Kuhn, Andreas Dengel. Entropy-based transition analysis of eye movement on physics representational competence. Proceedings of the 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing, WAHM, 2016
9. **Saleh Mozafari**, Pascal Klein, Syed Saqib Bukhari, Jochen Kuhn, Andreas Dengel. A study on representational competence in physics using mobile eye-tracking systems. Proceedings of the 18th International Conference on Human-Computer Interaction with Mobile Devices and Services, 2016.
10. **Saleh Mozafari**, Syed Saqib Bukhari, Andreas Dengel. Analysis of Text Layout Quality Using Wearable Eye-trackers. IEEE International Conference on Multimedia and Expo Workshops (ICMEW), 2015.
11. Mohammad Al-Naser, Peter Lanzer, Andreas Dengel, Syed Saqib Bukhari, **Saleh Mozafari**. Knowledge transfer from experts to novices in minimally invasive catheter-mediated (MIC) interventions, eye-tracking study. Proceedings of the 18th International Conference on Human-Computer Interaction with Mobile Devices and Services, 2016.
12. Mohammad Al-Naser, **Saleh Mozafari**, Syed Saqib Bukhari, Damian Borth, Andreas Dengel. What Makes a Beautiful Landscape Beautiful: Adjective Noun Pairs Attention by Eye-Tracking and Gaze Analysis. Proceedings of the 1st International Workshop on Affect and Sentiment in Multimedia, 2015.
13. Marco Stricker, Syed Saqib Bukhari, Mohammad Al Naser, **Saleh Mozafari**, Damian Borth, Andreas Dengel. Which Saliency Detection Method is the Best to Estimate the Human Attention for Adjective Noun Concepts? International Conference on Agents and Artificial Intelligence (ICAART), 2017.
14. M Mohammadi, **Saleh Mozafari**, Aradhya VN Manjunath, G Hemantha Kumar. An Improved Handwritten Text Line Segmentation Technique. Advances in Computing and Communications. Pages 289-296, 2011.