

Sourabh Raj

Founder & CTO | ML & AI Specialist | Solution Architect



About me

A keen learner and an explorer, willing to push boundaries to seek knowledge. I am a techie with the heart of an entrepreneur, always seeking to build something new. With my creative thinking and strong desire to make an impact, I look forward to crafting cutting-edge AI solutions that cater to real-world needs.

Contact

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📍 10777 Berlin, Germany

🌐 LinkedIn

🌐 Portfolio

Professional Skills

- AI
- Machine Learning
- Data Science
- Time-Series Forecasting
- Reinforcement Learning
- Recommender System
- Deep Learning
- Computer Vision
- Image Translation
- NLP
- Python
- Java
- Database/SQL
- MLOps
- AWS/Azure
- Airflow
- Docker/Kubernetes
- Git CI/CD
- Javascript/ReactJS
- Unity3D/C#
- C/C++
- Architecture
- Full-Stack/Web Development

Soft Skills and Strengths

- Business
- Quick Learner
- Problem Solving
- Leadership
- Ability to Plan and Organize
- People Management
- Autonomy
- Adaptability

Languages

English - *Fluent*

German - *B1*

Hindi - *Native Language*

WORK EXPERIENCE

Sept 2023 - Present

Co-founder & CTO

📍 Berlin

Andrual

Founded a venture backed by **Antler** specializing in innovative solutions for energy transition, with a focus on advanced climate-tech solutions.

- Design & Build SaaS solution(co-trader) to assist energy traders in their daily tasks with Generative AI, NLP and Statistical ML models.

Apr 2020 - August 2023

Head of Data Science

📍 Berlin

Resonanz energy GmbH

Led a team of Data Scientists, Data Engineers, and Machine Learning Engineers to create automated machine learning solutions for Renewable Energy trading, bringing the company to a successful exit(€7M).

- Plan and design production-grade models for real-time time series forecasting and decision-making algorithms to enhance energy trading optimization.
- Python, Game Theory, Supervised, Unsupervised and Reinforcement Learning, AWS/Azure

Jul 2019 - Mar 2020

Data Scientist(ML Engineer)

📍 Berlin

Funke Mediengruppe GmbH Co. KGaA

Innovate, engineer, and execute full-cycle ML projects, empowering media editors to enhance viewership. Drive projects focused on Churn Rate prediction, NLP-based Article Tagging, and Classification, utilizing cloud platforms such as GCP/AWS.

- NLP, Pytorch, Keras, Tensorflow, Pandas, Numpy, Sklearn

May 2019 - Jul 2019

Trainee Data Scientist

📍 Berlin

Frequenz Energy-as-a-Service GmbH

Conduct research and devise classification/prediction models tailored for multivariate data, with a focus on optimizing residential energy consumption.

- Timeseries Forecasting, DNN, Statistical models

Mar 2018 - May 2019

Developer

📍 Berlin

FUNKE Digital TV Guide GmbH

Develop Java-based Microservices tailored for processing editorial data to facilitate AI-driven optimization.

- JAVA, Microservices, Multithreading, Docker, Kubernetes

Feb 2015 - Nov 2017

Sr. Technical Consultant(Tech Lead)

📍 Gurugram

Deloitte USI

Design, Develop and Deploy web application for the administration and maintenance of an official healthcare System.

- System planning and design. (Full-Stack(Java))

Nov 2011 - Feb 2015

Web Developer

📍 Gurugram

Publicis.Sapient

Research and work on POC for various Java-based frameworks

- Full-stack(Java), System Design and architecture.

EDUCATION

Dec 2017 - Feb 2020

Master of Science

📍 Berlin, Germany

Technische Universität Berlin

Computer Science (Cognitive Systems)

Machine Learning(Supervised/Unsupervised Learning), Advanced Machine Learning - Theory and Application, ML Project - Image Translation, Machine Intelligence(DNN and Reinforcement Learning), Advanced Machine Intelligence, Cognitive algorithm and Computer Supported Interaction, Digital image processing

Volunteer work

The Earth Saviour Foundation(*India*)ActionAid(*India*)Redcross(*India*)

Other Interests

- Playing Guitar
- Playing Chess
- Traveling
- Cycling
- Swimming
- Reading Books

PROJECTS

- **MLOps using ZenML, FEAST, MLFlow AND Airflow**:- A fully functional MLOps framework to enable continuous development and deployment of Machine Learning Models.
- **Trading algorithm using deep reinforcement learning**:- An application to trade electricity using Statistical analysis, Neural network(Encoder-Decode/CNN/RNN), and Reinforcement Learning(PPO/A2C).
- **Forecasting and volatility modeling of Timeseries data**:- A model to predict and model the volatility of gas consumption and weather data to be used for the Germany Energy market. Uses SARIMA, AutoArima, and Neural Prophet for forecasting and Arch/Garch models to find Values-at-risk.
- **Real-time Anomaly Detector on time-series data**:- A real-time anomaly detector application to detect inaccuracies in energy price data received from traders. Used Generative Model for novelty detection and got an accuracy of 97% with real-world data.
- **Real-time 3D Pose estimation using Synthetic Training Data**:- Uses the concept of 3D augmentation to create synthetic training data combined with a neural network to label and then estimate the pose of 3D objects Perspective-n-point algorithm in real-time.
- **News Article tagging : NLP**:- Developed a model to tag and classify news articles based on their title and content. Used One-hot-encoding and TFIDF techniques along with Deep Neural Networks.
- **Image translation : Pix2Pix**:- Models InfoGAN with cGAN uses the architecture of U-Net neural network for image translation which has been proven more accurate and faster than other baseline models.
- **Recommender system - Online Learning**:- A Collaborative filtering algorithm for the Recommender system using Python. The data contains the user and movie ratings acquired from Coursera.com. This project applies Online learning for training and generalizing.

</> Thesis

Implementation of an automated pipeline for random keypoint detection and evaluation for visual object localization on synthetic and real data*Fakultät Elektrotechnik und Informatik, TU Berlin*

A Unity-3D(C#) and Python based pipeline to evaluate the pose estimation of 3D objects in real-world environment by using domain-randomized synthetic data to train Convolutions Neural Network and further using Perspective-n-point and Iterative closest point algorithms to estimate the pose. Results are bench-marked against datasets from YCB/Homebrew/TYOL.

🌟 ACHIEVEMENTS

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| <i>Winnings:</i> | <p>Won two data challenges in a competition conducted by DataHub Ruhr in association with Netconnect Germany.</p> <ul style="list-style-type: none"> • Real-time anomaly detection of Gas consumption data • Forecasting and volatility modeling for Weather and energy consumption data. |
| <i>Certificates:</i> | <ul style="list-style-type: none"> • Machine Learning (<i>Coursera, Feb 2019</i>) • Deep Learning Specialization (<i>Coursera, Sep 2019</i>) • MLOps Specialization (<i>Coursera, Aug 2023</i>) |