

Artur SOGOMONYAN

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☎ +43-677-641-145-81 | 📍 Austria | 🌐 Portfolio Website



EDUCATION

Data Science — <i>Master of Science</i> Technische Universität Wien, Austria	2022 - NOW
Information technologies and telecommunications — <i>Bachelor of Science</i> Bauman Moscow State Technical University Diploma thesis "3D printer failure detection system based on computer vision detection"	2014 - 2020
Deep Learning — <i>Deep Learning School</i> Moscow Institute of Physics and Technology	2020 - 2021
Machine Learning — <i>School of Data Analysis</i> Higher School of Economics University and Yandex	2020 - 2020

WORK EXPERIENCE

Data Scientist in Project Rail4Future — <i>Technische Universität Wien</i> • Analyzing rail irregularities, refactoring and optimization of the LSTM models. Working with industrial partners Siemens and ÖBB. • Performed significance tests, achieved robustness, and dramatically improved the performance of the model.	FEB 2024 - JUL 2024
CTO, Data Scientist — <i>susteam</i> • Architecture and Full Stack development of the ESG system. • Developed a pipeline with OCR, information retrieval, Data Analysis and Machine Learning. RAG implementation for LLMs. FastAPI, Amazon Web Services (AWS), Amazon EC2, S3, React.js, Bert, LLama3	JAN 2023 - PRESENT
Machine learning analyst — <i>GLOSAV</i> • Engineered a sophisticated algorithm to detect railway routes with object detection and tracking mechanisms. Developed a robust way to track obstacles on the rails. Achieved good performance and latency for real time stream less than 5ms. • Contributed to the design and implementation of an expansive microservice architecture of the train autopilot system. Python, YOLOv5, OpenCV, NumPy	FEB 2021 - JUL 2021
Project Manager, 3D-Modeller, Software Engineer — <i>Arterra Miniature</i> • Working with customers, 3D visualization, prototyping, 3D- printing, programming microprocessors and microcontrollers, work from scratch to delivery of projects. Blender, Cura, Arduino	FEB 2020 - MAR 2021
Frontend Developer — <i>KRK Group</i> • Developed corporate educational platform, React application, implementation of user interface, communication with databases. JavaScript, React	SEP 2019 - DEC 2019
Full-Stack Developer — <i>Linwood</i> • Implemented all stages of the online store development, subsequent testing, promotion and expansion of functionality for the required business tasks.	AUG 2018 - SEP 2019
Web developer — <i>Freelance</i> • Carried out projects, as Front-end and Back-end. Implemented from scratch or refactored existing solutions for functionality extensions. PHP, Yii2, html, scss, Python, Django	MAR 2017 - AUG 2018

PROJECTS AND AWARDS

Tourism Technology Hackathon — <i>2nd Place Winner</i> • Implemented a data pipeline mapping the data from different sources and building a knowledge graph for the different tourism subjects. The result I visualized as an interactive map with the chat bot, that could wrangle the the point of interest and conclude the insights of the analysis. Selenium, geoandas, folium	NOV - 2023
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- Coding Austria — *Lip Reading app at Hackathon*

JUL - 2023

- Utilized Audio-Visual Hidden Unit BERT model for lips reading task for the Austrian Red Cross challenge.
 - Integrated the model into the web app, passing the video stream from the smartphone to the model, reading the lips and generating a text passed as a message to the chat.
 - This application allowed the Red Cross team to communicate in a very noisy environment, when it is not possible to use walkie-talkies.

AV-HuBERT, FastAPI, Next.js
- Cryptex — *Full-stack Development of the NFT Platform*

FEB - 2024

- Implemented a secure authentication system using MetaMask, allowing users to store and manage seed phrases as encoded NFTs.
 - Developed the platform’s backend to interact seamlessly with the Polygon blockchain, ensuring efficient and secure transactions.

Svelte, Polygon, Solidity
- TradeBot — *Crypto Trading Analysis and Future Trading*

JUNE - 2024

- Engineered a bot to systematically scrape and collect trade data from Binance, enabling detailed real-time market analysis.
 - Designed and implemented a robust trading strategy, optimizing for both short-term gains and long-term trends.
 - Automated the execution of trading strategies using a custom-built bot, ensuring consistent and timely trades.

asyncio, FastAPI, BinanceAPI, pandas, mplfinance
- DAVU Project TU Wien — *Document Analysis and Optical Character Recognition (OCR)*

JUNE - 2024

- Conducted a comprehensive layout analysis of historical documents, identifying key structural elements to improve text extraction accuracy.
 - Implemented an OCR pipeline using Tesseract, optimizing the process by experimenting with different binarization techniques, which resulted in significant improvements in Word Error Rate (WER) and Character Error Rate (CER).
 - Analyzed the impact of various preprocessing methods, such as binarization and cropping, on OCR performance, achieving optimal text recognition by fine-tuning OCR engine parameters.
 - Integrated advanced Named Entity Recognition (NER) using SpaCy and fine-tuned language models (e.g., LLaMA-3) to extract metadata from images, enhancing the accuracy of location, date, and photographer identification in historical datasets.

Tesseract, SpaCy, LLaMA-3, Python
- Arterra — *Portfolio Website Development*

AUG - 2024

- Designed and developed a portfolio website, integrating continuous integration/continuous deployment (CI/CD) pipelines for seamless updates via GitHub Pages.
 - Utilized Obsidian vault data to create an interactive front-end that visualizes my professional journey using graphology and sigma libraries.

Svelte, graphology, sigma
- LawSyncr — *Full-stack and Machine Learning Development*

AUG - 2024

- Conducted in-depth research and analysis to evaluate innovative ideas, leading to the creation of a comprehensive pitch deck.
 - Led the end-to-end full-stack development of the project, including the implementation of a Minimum Viable Product (MVP) with integrated machine learning components.

Flask, Svelte, RAG, LLM

SKILLS

Software Development	Machine Learning	Databases and Cloud	Languages
<ul style="list-style-type: none">dockerPythonC++RDjangoFlaskFastAPIJavaScriptReact, Svelte	<ul style="list-style-type: none">scikit-learnPandasNumPyTensorflowPyTorchOpenCVYOLONLTK, SpaCyBert, LLama3, GPT	<ul style="list-style-type: none">GitPostgreSQLMongoDBRedisRabbitMQnginx, UnicornSparkAWS EC2, S3Linux/Debian/Fedora	<ul style="list-style-type: none">English (C1)German (A2)Russian (C2)Armenian (B2)