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# Oleh O

## AI/ML Engineer and Data Scientist

### SUMMARY

- \* Data Scientist with a Master’s Degree in Computer Science and extensive experience in machine learning, deep learning, and cloud services ( Azure,AWS and GCP).
- \* 7 years of experience, proficient in building ML pipelines and deploying scalable solutions.
- \* Developed and deployed a voice-to-voice pipeline for a call center VoIP system using Whisper, Llama, and MMS-TTS, including API integrations and Docker deployment.
- \* Implemented a Google Doc AI Wrapper, improving document recognition accuracy through advanced preprocessing techniques.
- \* Designed a deforestation detection system using clustering and Azure-based services to monitor forest areas.

### SKILLS

<b>Main Technical Skills</b>	Python, Azure, TensorFlow, PyTorch
<b>AI &amp; Machine Learning</b>	Amazon Lex, AWS ML (Amazon Machine learning services), Google Document AI, Keras, Kubeflow, Linear models, LLaMA, ollama, OpenCV, OpenVoice, PCA, Prompt Engineering, PyTorch, Spacy, TensorFlow, Transformer models, vLLM, Whisper
<b>Programming Languages</b>	Python
<b>Python Libraries and Tools</b>	Keras, Matplotlib, NLTK, Pandas, Pillow, Pyporcupine, PyTorch, Seaborn, TensorFlow
<b>Mobile Frameworks and Libraries</b>	KVO
<b>JavaScript Libraries and Tools</b>	p5.js
<b>Data Analysis and Visualization Technologies</b>	Decision Tree, ETL, Jupyter Notebook
<b>Cloud Platforms, Services &amp; Computing</b>	AWS, Azure
<b>Amazon Web Services</b>	AWS Boto3, AWS LightSail, AWS ML (Amazon Machine learning services)

<b>Azure Cloud Services</b>	Azure
<b>Google Cloud Platform</b>	GCE, GCP BigQuery, Google Docs
<b>SDK / API and Integrations</b>	API, Google API
<b>Third Party Tools / IDEs / SDK / Services</b>	Asterisk, Sublime Text
<b>iOS Libraries and Tools</b>	Core Audio
<b>Virtualization, Containers and Orchestration</b>	Docker, GCE
<b>Web/App Servers, Middleware</b>	MSCS (Microsoft Cluster Server)
<b>Platforms</b>	Unity
<b>Other Technical Skills</b>	MIP, MIPS, MLP, MMS, MMS-TTS, PELCO-D, Rhino Grasshopper, VoIP

## WORK EXPERIENCE

### Caller - VoIP server for call center

Implemented voice-to-voice pipeline in Hebrew for VoIP server for call center.

#### Responsibilities:

- Implemented voice-to-voice pipeline Whisper (STT) - Llama (text-only) - mms-tts (TTS) - OpenVoice (voice cloning),
- Implemented API to interact with models and to integrate them with the VoIP server,
- Prepared dataset for training text-to-speech and speech-to-text models,
- Trained whisper model,
- Deployed models using Docker, created Dockerfiles for models,
- Prompt engineered LLama,
- Configured Asterisk VoIP server,

Tools and technologies: Docker, AWS, ollama, vLLM, Llama, Whisper, MMS-TTS, OpenVoice, Prompt Engineering, Asterisk

### Google Doc AI Wrapper

Implemented wrapper for Google Doc AI service in order to improve service accuracy in recognizing freeform documents

#### Responsibility:

- Used image preprocessing techniques to improve document recognition by Google service,



- Parsed recognized document data and searched for desired form fields, tables and other valuable data,
- Implemented processing and filtering recognized table data,
- Implemented optimization function that combine different image preprocessing methods in order to find combination that provide most recognized data that are searched for

Tools and technologies: Google document ai, OpenCV, pillow, Pandas

### **Assets tracking with camera POC**

tracking asset's location: real-time positioning, collecting information about cargo and handling equipment using machine vision

Responsibilities:

- Trained container segmentation model, added OCR,
- Created a pipeline for localizing an object on a map using a depth camera,
- Implemented optimization function that combine different image preprocessing methods.

Tools and technologies: Google Vision API, OAK-D (OpenCV Kit), Tensorflow, Keras, Unity3D (synthetic data generation, visualization)

### **LiveScetchScanner**

Implemented camera image and mask processing module; implemented voice command interface

Responsibilities:

- Extraction image part based on mask from NN and Hough line detector,
- Image transformation, processing, filtering,
- implementation voice command interface using Amazon Lex bot API and rhino model

Tools and technologies: OpenCV, Pyaudio, Pyporcupine, rhino, Amazon Lex, boto3

### **Meowtalk**

App to translate the cat's meows

Responsibilities:

- Created Docker containers with code parts needed for model training,
- set up training pipeline for Meowtalk model using Kubeflow Pipeline in GCP,
- Modified data preprocessing to achieve better accuracy of the model.

Tools and technologies: Docker, Kubeflow pipeline, GCP, Keras

### **Creating the model to predict the playoff results of the World Cup**

Responsibilities:

- Data analysis, preprocessing, data cleaning
- Search for additional data



- Feature development based on all available data
- Dataset formation for training models
- Selection of models (Linear models, Decision trees, MLP) for prediction and analysis of results

Tools and technologies used: scikit-learn, PCA, Linear models, Decision trees, MLP

### **Meeting summarizer**

Implemented model for creation summaries of audio meetings based on article

Responsibility and achievements:

- Research of existing abstractive text summarization methods
- Implemented tree-based method

Tools and technologies used: Python, Azure, spacy, NLP-abstractive text summarization, MIP

### **Deforestation detection**

Developing model for deforestation detection on Ukraine territory

Achievements:

- Collected dataset of map fragments: writing scripts to work with the API, searching for the necessary fragments by coordinates, date, filtering by cloudiness and types of fragments and their download
- Created a dataset for network training by clustering images (k-means, image clustering), searching for outliers / anomalies, and then selecting images from different clusters
- Implemented forest watch service based on Azure function
- Implemented a model for deforestation detection.

Tools and technologies used: Rasterio, MS Azure, image clustering

## **EDUCATION**

- **Master's Degree in Computer Science**, National University

