

# LYLE OKOTH | SOFTWARE ENGINEER

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## PROFESSIONAL SUMMARY

A software engineer with 3+ years experience designing ,building and deploying both web and desktop python applications that leverage natural language processing. I have worked on various projects including a chat-based application for interacting with youtube, a python wrapper library for the youtube API, a social media application for sharing photos and a python library for generating documentation for python projects. I have also built a machine learning pipeline that takes in data, preprocesses it, trains and fine tunes a classification model and deploys it.I am also the founder of a startup that is building tools and AI agents that work with humans to help them accomplish various tasks.

## PROFESSIONAL EXPERIENCE

### **Oryks Systems • 01/2023 - present**

#### **Software Engineer**

- Built custom tools used by autonomous AI agents to carry out various tasks including sending emails, scheduling events and managing youtube channels using langchain and various google APIs.
- Built conversation AI agents for carrying out various tasks, including managing a youtube channel as well as generating documentation for python projects using langchain and openai's chat-gpt model.
- Built Retrieval Augmented Generation pipelines that reduced the amount of hallucinations of the gpt-model using llama index and the quadrant vector database.
- Wrote detailed documentation and articles for both our engineers and users to make the usage of our products easier.

### **Oryks Systems • 01/2023 - present**

#### **Data Analyst**

- Designed and built a web scraping pipeline that was used to scrape various google APIs for text used in the generation of documentation using the scrapy framework and mongodb for storage.
- Built an AI agent for analyzing reviews of any product from a youtube video transcript and the video comments to determine what should be improved upon.
- Built knowledge graphs from text that was used by AI agents in their RAG pipelines to reduce hallucination using spacy, chat-gpt through langchain and the neo4j database.
- Built a machine learning pipeline that takes in data, preprocesses the data, trains and fine tunes numerous classification models and deploys the best model using scikit-learn, celery and redis.

### **KAPPS • 12/2019 - 08/2020**

#### **Software Engineer**

- Did technical documentation, both internal and user-facing making it easier to onboard new engineers and our API easier to use by other third parties.

- Implemented a redis cache that significantly sped up the response to farmers queries.
- Implemented redis queues to decouple the two microservices that made up the backend increasing the overall resilience as well as speed of service delivery.
- Worked with the data scientists to implement redis workers for image ingestion, preprocessing and model prediction that significantly made our service faster.

## TECHNICAL SKILLS

• *Python • PostgreSQL • Amazon Web Services • SQL • Web Scraping • Large Language Models • Docker • Natural Language Processing • Flask • FastAPI • Prompt Engineering • Retrieval Augmented Generation • LLMOPS • MLMOPS • Quality Assurance • Documentation • Redis • MongoDB • Neo4J • Word Embeddings • Text classification • Sentiment Analysis • Vector databases • Celery • Pytest • Topic Modeling • Chatbot Development • Dialog Management • GPT-3 • langchain • llamaindex • transformers • huggingface • scikit-learn • spacy • nltk • pandas • numpy*

## PROFESSIONAL EDUCATION

B.Sc. in Mechatronics Engineering • 2016 –2019

Jommo Kenyatta University of Agriculture and Technology • Nairobi, Kenya Member • Society of Engineering Students (SES)

**Relevant coursework:** • C, C++ Programming • Solidworks • Matlab

## PROJECTS

### • **YouTube-Assistant:**

This is a chat-based AI assistant for managing a youtube channel. It allows the user to upload videos, edit video details, create youtube playlists, add videos to playlists, view video comments, comment on a video, answer comments, search for videos, channels, playlists, like videos, update channel details and much much more over chat. Built with langchain, chat-gpt, python and the youtube API.

### • **Youtube:**

This is a python library that wraps around the youtube API and enables the user to programmatically interact with youtube. This includes searching for resources, viewing video, channel and playlist details, creating, updating, deleting comments, creating playlists and so much more.

### • **Documentation Generator:**

This is a python library for generating documentation for python projects.

### • **Machine Learning Pipeline:**

This is a machine learning pipeline for getting data, preprocessing the data, creating, training, fine tuning and deploying the best classification model, as well as sending out notifications by email. Built with scikit-learn, redis, celery, FastAPI, docker and postgresQL

## VOLUNTEERING

**Omdena • 01/2024 - present**

### **Data Analyst**

Scraping the web for textual datasets and analyzing the text data to generate datasets used in training a large language model that is used in the generation of non player characters for video games.