



Ref No. : 2023-AP-506

06th July 2023

TO WHOM IT MAY CONCERN

This is to confirm that Mr. Aathman Tharmasanthiran was employed with WSO2 Lanka Private Limited, which is a subsidiary of WSO2 LLC., from 01st April 2021 to 02nd July 2023. He was a permanent and confirmed employee of the company and working on a full-time basis (40 hours per week). At the time of his resignation, he worked in the capacity of Software Engineer.

WSO2 is the world's #1 open-source integration vendor, helping digitally driven organizations become integration agile. The company's hybrid platform for developing, reusing, running, and managing integrations prevents lock-in through open-source software that runs on-premises or in the cloud.

He has performed the following duties and tasks:

Major contributions

- Agent based Natural Language support for the WSO2 Mobile app
- Adding and Testing Natural Language API invocation support for WSO2 Internal APIs
- Low code suggestion/Connector suggestion using LSTMs
- Contributed to the Autotrainer pipeline (Model training, inference)
- Connector suggestions using GPT-3
- Data mapping using GPT-3, Codex
- Alerting component
- Architecture design of various components
 - Natural language interface for Choreo User APIs
 - ChatGPT plugin support for Choreo User APIs
 - Low code suggestion
 - Choreo Question Answering Chatbot

Leadership (internal)

- Worked with team members during Alerting component delivery
- Worked with team members and planned deliverable timelines (Gantt chart) and worked with them to achieve the target goals for the Connector suggestion feature

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Community work

- Mentoring Software Engineering student projects
- Mentoring the FYP research team

Communication

- Conducted a total of six sessions on ML Observability for the AI team

Evangelism articles written

- Explanation about Alerting feature in Choreo (published in Choreo docs)

Team player

- Working with team members to deliver features on time
- Helping to resolve any blockers / fix issues
- Contributing to discussions and providing constructive feedback

Work experience

Agent based Natural Language support for the WSO2 Mobile app

- By testing the Internal APIs and gaining confidence in the success of the LLM Agent-based approach, Aathman worked on adding voice and text based Natural language support for the WSO2 Mobile app, from which users can talk to the app in natural language and get things done.

Adding and Testing Natural Language API invocation support for WSO2 Internal APIs

- He worked on testing and using the Ballerina Agent library, which uses ReAct Framework and Large Language Models to invoke various WSO2 Internal APIs from Natural Language instructions.

Low code suggestion/Connector suggestion using LSTMs

- He worked on the Next Low code suggestions feature on modeling and feature engineering of Ballerina Syntax Trees into an abstract tree structure and tried out word embeddings and Deep learning modeling techniques to predict the next possible low code element. And then modified it to predict the next possible connectors that users might be interested in adding.



Contributed to the Autotrainer pipeline (Model training, inference)

- He has also been working on MLOps pipelines to auto train and deploy Machine Learning models, in which he mainly contributed to the automatic feature extraction model training and serving of the models.

Connector suggestions using GPT-3

- He also conducted research on further extending the Low code suggestion feature to give code segment suggestions from comments and code generation of the entire microservice from comments outlining the structure of those programs by using Codex and GPT-3 models.

Data mapping using GPT-3, Codex

- He also researched Datamapping using GPT-3 and Codex models by designing several different preprocessing techniques that can fully utilize the power of these models efficiently to outperform the previously used models intended for the data mapping tasks.

Alerting component

- He quickly learned and started the work on Azure components such as Function Apps, Event Hubs and Stream Analytics Jobs and delivered the feature in time and he continued to work on improving the stability of the feature along with his team members.

Architecture design of various components

- He is responsible for planning and coming up with the user stories and designing the architecture containing the interactions between various APIs, Databases, etc to provide deliver several vital features including the Natural language interface for Choreo User APIs, ChatGPT plugin support for Choreo User APIs, Low code suggestion in Choreo and Question Answering Chatbot for Choreo.

Volunteer activities

- He has been contributing to several student projects by mentoring students and guiding them on doing projects along with industry best practices.



Mentoring Software Engineering student projects

- He mentored IT students from the University of Moratuwa consisting of two teams of students, with each team composed of four students working on Software Engineering projects

Mentoring the FYP research team

- He also guided a three member final year research project group working on Anomaly Detection for Service Graphs.

Conducted ML Observability sessions

- He conducted around six sessions/discussions with our team members about ML Observability and how it can help our ML workflows.
- During these sessions, Aathman emphasized the importance of monitoring the model's performance, data bias, fairness and interpretability of the models during the training and inference process to improve the overall performance of the models.
- This information led our team to start ML Observability for Performance Analyzer and apply what we learned in those sessions.

Should you require further clarification please contact the undersigned.

Thank you.

WSO2 Lanka (Pvt) Ltd.,

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Amangi Perera

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