Being an informatics student, I have learned about concepts of AI through classes. For example, I learned the basics of what an AI agent is. (A tool that carries out a specific task). I wanted to explore this concept more deeply, so I browsed through open source projects. I found that Autogen is a highly popular open source project that uses Agentic AI. I used Autogen to run agents, to provide me data on sales for Microsoft. This included having a chat manager agent that directs tasks to other agents depending on the prompt. In order to detect the prompt, an LLM configuration is used. The other agents provided the data and executed the given tasks. For example, if I wanted to have a visualization for the sales data, a code interpreter agent is used to generate the code for the visualization and then will execute it. This is done in a sandbox environment to maintain security and integrity of the data. There are many ways to get the data. The first way is function calling which is a way for models to connect to external tools. This is done through an LLM analyzing the prompt and calling on the appropriate functions that best answer it. For example, if I wanted to know what were the monthly sales of Microsoft in 2019, using function calling, the LLM will look through the key words (monthly sales) (2019), and find the functions that would best retrieve this data. Another way to do this, is using grounding with documents. This is a more advanced way of retrieving data and provides the model access to external data. For example, in this case, I only have access to Microsoft data, but with grounding with documents, I can upload more information(such as from other companies), providing me with more data and uses. In this case, the model will use RAG to get the data that is most relevant to the user prompt. RAG allows for the relevant data to be found in the context of multiple data sources.

Overall, from this project, I learned some of the tasks that an AI agent can do and learned about concepts such as function calling, grounding with documents, LLMs, and Agentic AI.