

Haolong Li

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EDUCATION

Master of Science, Computational Science and Engineering, EPFL

June 2025

- GPA: 5.26/6.
- Keywords: **Software development, Data Science, Machine Learning.**

Bachelor of Science, Statistics, Harbin Institute of Technology

June 2022

- GPA: 90.4/100, Ranking: 2/20.
- People's scholarship: HIT grant for outstanding students, awarded to no more than 2 students.

PROJECTS

Research Intern, Jarvis, EPFL Data Science Lab huggingface.co/aiflows/JarvisFlowModule **Sept. 2023 – Feb. 2024**

- Designed and implemented JARVIS, a general-purpose interactive **large language model (LLM)** agent empowered by 17 hierarchical LLMs equipped with code interpreters and memory management mechanisms, able to accomplish tasks by writing & executing code interactively, and utilizing resources in the memory.
- Extended lifespan of the agent constrained by token limitations of LLM APIs by more than 5 times, by separating roles to a hierarchical structure of planners, controllers, and executors; injecting external memory into **prompts**; and implementing a sliding window of LLMs' history messages as memory management.
- Implemented long-term memory of the agent under the context of the sliding window memory management, enabling the agent to stick to the original goal and reuse previous results, by implementing external memories including plans, history logs, and code libraries, and injecting them into the sliding window of history messages.
- Built the structure of JARVIS to ensure clear **object-oriented design** and inter-model interaction of LLMs and tools by implementing abstract classes and relevant inheritance, configuring parameters with **Hydra** and reasonable **prompts**.

Android developer & Scrum master, Cook4Me github.com/cook4me/android

Feb. 2023 – June 2023

- Built an Android app for people to enhance their food experience with **Kotlin & Jetpack Compose**, contributed 132 commits & 5000+ lines of code with code climate code maintainability level A to the main branch, in the pattern of **MVVM** with the **Scrum** development process.
- Designed **Instrumented tests** for **continuous integration** for each feature, reaching an overall test coverage of 81%, by working with the **JUnit 4 test framework**.
- Implemented the challenge and the event feature, by building respective data classes with relevant methods, making them error-resilient and easy to maintain; and designing display screens, viewmodels, and interactions with **Firestore**.
- Assembled the chat feature and integrated it into other existing features, enabling users to chat, view profiles from chat, and start chats from different entries in the app, by wrapping up and integrating the stream chat service.

Data Analyst, Route Planner github.com/Tachi-67/Route-Planner

Feb. 2023 – June 2023

- Implemented analysis over the dataset of Switzerland's public transportation timetable (~5 million rows) to build a travel route planner, by working with **Python, PySpark, and Hadoop HDFS**.
- Implemented data wrangling from preprocessed data (~250,000 rows), resulting in a station-to-station public transportation map with travel time and duration, by using **Spark RDD MapReduce** and **Spark DataFrame UDFs**.

Front-end Developer, Pokemon Data Story tachi-67.github.io/pokemon-data-story/

May 2023 – June 2023

- Implemented a website of 5 pages to illustrate Pokemons' characteristics.
- Implemented an interactive bar plot to show Pokemon abilities' frequencies by utilizing D3.js and SVG.
- Built a 3D plot of Pokemons' ability, by preprocessing Pokemon data with Python and then plotting with Plotly.

SKILLS

Languages: English (TOEFL iBT 114), Mandarin (mother tongue).

Programming: Python (proficient), Kotlin (familiar), Java (familiar), C++ (prior experience).

Technologies: Pytorch, Hydra, Apache Spark, Apache Hive, Android, Firestore, Jetpack Compose.