HENGKUAN LU

hengkuanlu@gmail.com 872-801-1304

EDUCATION

The University of Chicago, United States *Sep 2021 - Dec 2022 (expected)*
Master of Science in Computer Science
Coursework: *Computer Networks, iOS Development, Compilers, Web Development, Data Base, Cloud Computing*

Fudan University, China *Sep 2016 - June 2021*
Bachelor of Engineering in Electronic Engineering & Data Science
Coursework: *Machine Learning, Artificial Intelligence, Big Data Analysis, Computer Architectures, Data Structure*

TECHNICAL SKILLS

Programming:	Python, Java, C, C++, CSS, HTML, JavaScript, Swift, Golang, Matlab, Shell
Software & Tools:	AWS, Linux, Git, MySQL, sqlite, DynamoDB, MongoDB, REST API, Flask Node.js, JSON, Angular, Vue, jQuery, React, Hadoop, Spark(Pyspark), Hive, Pytorch, numpy, pandas, seaborn, faker, VirtualBox, Gdb, Latex, Markdown
Background:	Data Structure & Algorithms, Data Base, Cloud Computing, Web, Compilers, Architectures, Networks, Operating Systems, Parallel Programming, Big Data Machine Learning/Deep Learning

WORK EXPERIENCE

HYPERGRYPH Network Technology Co.,Ltd, China *Sep 2020 - Dec 2020*
Data Engineer
- Provided solutions to decrease illegal users by more than 50% in a season
- Processed data screening (**JSON** format) and data processing using **SQL**(MySQL)
- Wrote weekly auto test codes in **Python** filtering out abnormal users from TB level of data
- Implemented unsupervised learning algorithms (**K-means**, **Clustering**) and feature learning methods to classify users as legal and illegal using **Spark**

RECENT PROJECTS

GAS(genomics analysis service)
Provieded a server on **AWS** for users to run programs to perform annotations of genome samples, to trace the status of the program and to log the input and output records. Kept the servers running using **tmux**.

- Maintained two **EC2** instances for front-end and back-end and two **S3** buckets for input and output files.
- Wrote a **falsk** app to support a web server where users can upload the input files for the annotation program and make a post request for the back-end server. Inserted an item to the **DynamoDB** when a job was requested.
- Implemented the back-end server to download the files from the input bucket and run the annotations and update the job status in the databases. Uploaded the output to the output bucket when a job is completed.

Golite Compiler (available here)
Designed a compiler with a complete structure for a Golang like language called Golite, using **Golang**.
- *Front End* phase: Constructed a scanner, a passer with Abstract Syntax Tree construction and Semantic Analysis
- *Middle End* phase(optimizer): Implemented the transformation of Intermediate Representation(IR to ILOC)
- *Back End* phase: Completed the code generation (ILOC to ARM assembly code)

Gomoku(available here)
Developed an **iOS** application called Gomoku based on **Swift Storyboard** where players can players a game with each other.

- Supported archive of unfinished games.
- Allowed time limit of each turn and regret of the moves in a game.
- Enabled multi-players, several players can compete with each other by their points in a serial of games.