

# Xinghao CHEN

## Electrical and Computer Engineering

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## EDUCATION

2020 **Fudan University**, Bachelor of Science, Electronic and Information Science and Technology  
2021 **Georgia Institute of Technology**, Master, Electrical and Computer Engineering

## COMPETENCES

**Languages** Python, MATLAB, verilog, C(++), JavaScript, HTML, Java, Go, ...  
**Awards** National 1st-class award of CUMCM 2018; 2nd class undergraduate scholarship; ...  
**Efficiency** Awareness of automation, code structure and strategic plans  
**Interests** [NOT PROFICIENT SKILLS] Blockchain, ETL, micro-service, design patterns, documentation, interdisciplinary applications

## EXPERIENCES

June 2019 **Ignareo, HTTP SPIDER CORE OF ULTIMATE CONCURRENCY, 130+ stars**  
➢ Spiders packed in asynchronous tornado servers  
➢ Distributed broker architecture : aspects packaged as micro-service nodes  
➢ Covering shortages of scrapy : non-blocking sleep, user codes of better cohesion, freedom and tidiness; scalability with customized load-balancing  
➢ Seamless compatibility with anything based on asyncio or gevent  
➢ Combat-proven performance and stability  
`distributed` `web spider` `asyncio` `aiohttp` `gevent` `requests` `tornado`

May 2021 **Intern blockchain developer, SMART CONTRACTS, ON-CHAIN SYSTEMS & SAFETY ISSUES, neo.org**  
July 2021  
➢ Developed a financial smart contract ruler protocol referring to the protocol in Solidity : built test systems with RPC and Neo's virtual machine; established methods to debug smart contracts with Neo's vm and private blockchain; helped find vm-instruction-level issues in Neo's Python compiler "neo3-boa"; docstrings in code.  
➢ Helped build a web demo utilizing Neo's features : NeoFS, digital ID system, oracle & smart contracts. Analyzed the front end (using React) and smart contract codes in docs.  
➢ Helped analyze Neo's vm instructions and its garbage collection module, which lead to reveals of denial-of-service attacks implemented with malicious smart contracts.  
`Neo blockchain` `smart contract` `neo3-boa` `neo-mamba` `neo-vm` `NeoFS` `Neo ID` `Solidity` `C#` `React`

February 2020 **Intern backend developer, FEDERATED LEARNING BACKEND WITH DATA PRIVACY, www.points.org**  
June 2020  
A web service for cross-organization federated machine learning. Based on distributed datasets from different organizations, the training process should still keep strict data privacy of each data owner. The service is principally based on gRPC instead of HTTP.  
➢ Basic but complete experience of commercial development flow : designing, coding, deploying, testing, pull request and code review. 111052++, 86888- lines of code commits in the main repository.  
➢ Designed and wrote a user and API authorization backend. Wrote a data-usage approval backend.  
➢ Referring to horizontal learning APIs, developed vertical learning APIs. These APIs mostly involve data manipulation, but do not include core encryption and secret-sharing algorithms for learning.  
➢ Wrote a basic service to retrieve real-time logs from docker containers and feed them to the frontend.  
➢ Developed basic automatic cross-system process tests for the APIs described above.  
➢ Implemented a mechanism to stop distributed vertical or horizontal training.  
➢ Built a basic client for on-line model inference service stress test, using Ignareo.  
➢ Tentatively designed a RESTful service for data providers to manage data, using flask and swagger.  
➢ Participated in software copyright registration and federated learning product standards.  
➢ Wrote docs and user manuals.  
`protobuf` `gRPC` `sqlalchemy` `redis (message queue)` `tensorflow-federated` `dockerfile` `docker-compose` `git` `Flask` `swagger` `Go`

August 2021	Intern backend developer, <b>WEB SPIDER &amp; FLASK BACKEND FOR OPENMMLAB OPERATION SERVICE, SenseTime × Shanghai AI Lab</b>
September 2021	<ul style="list-style-type: none"> <li>› Maintained a system to fetch information from OpenMMLab's Github repositories and display info on a web page; send weekly e-mail reports based on fetched Feishu docs. Fixed miscellaneous bugs and implemented back end features.</li> <li>› Designed a process to migrate data from SQLite to MySQL (using DataGrip).</li> <li>› Designed code for runtime multi-thread operations in Flask.</li> </ul> <div> DataGrip docker-compose Flask SQLAlchemy apscheduler requests </div>
July 2019	Intern developer, <b>HIGH CONCURRENCY WEB SPIDER FOR MONITORING, Johnson Controls</b>
August 2019	<ul style="list-style-type: none"> <li>› Monitored tens of thousands of IoT devices with help of <u>Ignareo</u>.</li> <li>› Analyzed anomaly and output results to Excel sheets.</li> <li>› Provided a web service to browse and download the Excel files.</li> </ul> <div> Ignareo requests tornado xlwings </div>