

PAI PENG

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A diligent, great attention to details, highly motivated and quick learner. Looking for software engineer roles.

🎓 EDUCATION

The University of Edinburgh, Edinburgh, Scotland Sep. 2021 – Dec. 2022
Master of Science in Computer Engineering (With Merit)

Nanjing University of Science and Technology, Nanjing, China Sep. 2017 – Jun. 2021
Bachelor of Engineering in Robotics and Automation Engineering
Honors and Awards: China National Scholarship 2018 (Top 0.2% national-wide)

⚙️ SKILLS

- Programming Languages: Java, Python, C/C++, SQL, Scala, Shell, JavaScript, HTML/CSS
- Technologies & Tools: Git, Unix/Linux, Vim, MySQL, MongoDB, Apache Spark, Flask, Vue.js, Pandas

👥 PROJECTS

Python Frontend for A Query Engine | *Python, SQL, Pandas, Git* May 2022 – Sep. 2022
Individual Project <https://github.com/amirsh/pandas-sdql>

Brief introduction: An API similar to Pandas API, but achieves a higher performance

- Converted all 22 SQL queries in TPC-H benchmark (covering various data operations) to Pandas functions.
- Implemented some functions similar to Pandas for the query engine, including `join()`, `merge()`, `groupby()`, `sum()`, `avg()`, `count()`, `min()`, `max()`, etc.
- Created an API for a new query language (SDQL) with SOLID principles, ultimately enabling it to run at about 100x the speed of the original Pandas.

Advanced Database System | *Java, Maven, SQL, CQ* Jan. 2022 – Mar. 2022
Individual Project <https://github.com/Altman-S/UoE-Assignment/tree/master/ADBS>

Brief introduction: A Mini Database System containing basic data operations

- Implemented the Minimization Operation of Conjunctive Query (CQ) to reduce the amount of data search.
- Built a simple interpreter for Conjunctive Query with the Left-Deep Join Trees strategy in Java and generated a graph of Query Block.
- Constructed the basic operations (select, join, etc) of the database system based on Factory Method Pattern.

Full Stack Web Development | *Vue, HTML/CSS, Flask, MongoDB* Nov. 2021 – Mar. 2022
Team Project <https://github.com/Altman-S/NewBee>

Brief introduction: Construct a IMDB Movie Search Website from scratch

- Designed a Python web crawler that monitored a movie information website, implemented HTML parse and storage, achieved a fully-automatic web crawler.
- Used Vue framework to write HomePage, ErrorPage, InfoPage and TypePage on the search website.
- Deployed the website with Flask web framework on the Google Cloud Platform. Configured the Unicorn application server and Nginx proxy request.

Extreme Computing | *Scala, Apache Spark* Oct. 2021 – Dec. 2021
Individual Project <https://github.com/Altman-S/UoE-Assignment/tree/master/EC>

Brief introduction: MapReduce Program in Scala and Apache Spark

- Used Scala Collection API to write MapReduce program to process millions of recorded data and extracted the data that meets the conditions.
- Used Apache Spark to process the data stored in the Resilient Distributed Dataset (RDD) of millions of records and extracted the data that meets the requirements.