

SHUAIHUA NIU

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EDUCATION

Master of Software Engineering | University of California, Irvine | Irvine, CA Sep. 2021 - Dec. 2022
Bachelor of Computer Science | Beijing University of Technology | Beijing, China Sep. 2017 - Jul. 2021

SKILLS

- Programming: Java, Python (Pandas, PyTorch, Numpy, Matplotlib), C, SQL, Verilog
- Website Development: React, Express, Node.js, MongoDB, Bootstrap, HTML, JavaScript, CSS
- Other Skills: Git, Linux, Android, Vim, MIPS Command

WORK EXPERIENCES

Software Development Engineer (SDE) Intern | University of California, Irvine Jun. 2022 - Current
Work with a team of 4 and analyze patient blood samples and proteomes using **Python**. Build web interface with **React, Express, MongoDB, Node.js (MERN)**.

- Process the proteome library (218GB) into database. Fix the memory error of huge input files.
- Implement algorithms to filter significant protein sequences and tetramers by statistic values. Improve the performance from **15min** to **0.01s** by using database optimization and multiprocessing.
- Write **2** Restful APIs to connect the user interface with local process to get data process results.
- Build a web interface for non-tech users to process more proteins. Design the UI using **Material-UI, Bootstrap** based on UI/UX principles, implement, test and deploy the website from scratch.

Software Development Engineer Intern | Chinese Academy of Sciences, Beijing, China Aug. 2020 - Oct. 2020
Built a tool in **Python** that allows users to generate a map with different climate areas by inputting daily average temperatures and precipitations, making the climate data more visual.

- Constructed a statistic model that used temperature and precipitation data in China from 2014-2016 to mark different climate zones from 1 to 10 in 222,600 geographical areas.
- Designed a feature with output of a map with greyscale values representing 10 different climate zones.

Product Manager Intern | BDBSecurity, Beijing, China Mar. 2020 - Apr. 2020
Collaborated with mentor and 5 engineers to collect user information and analyze users' preferences in **Python**.

- Analyzed user feedback and suggested solutions to engineers to add new or improve existing features.
- Enhanced product's security through conducting requirements analysis.

PROJECTS & CONTESTS

Write Your Own Git | Main Developer Jul. 2022 – Aug. 2022

- Built a basic Git client by reverse engineering the functionality of the source control system.
- Learned and designed the data structure of Git and implemented more than **10** commands.
- Implemented the library and successfully tested all the commands.

Object Segmentation Based on Multi-Task Learning | Main Developer Mar. 2021 - June 2021

- Constructed an object segmentation network model for multi-task learning in **Python**.
- Combined Faster R-CNN and FCN together to realize target detection, recognition and segmentation at the same time.
- Improved object segmentation performance through different backbone network by 8%, through loss function fusion methods by 6%, and through skip connection methods by 8%.

National College Student Information Security Contest | Main Developer Apr. 2020 - Aug. 2020

- Acted as the product manager for a team of 4 and responsible for a data gate-related software design.
- Developed desensitization algorithms and implemented algorithms in software using **Java**.
- Selected to attend national contest and placed in the third tier (**top 30**) out of 200 teams.