

Acan Xie

Mailing Address: Bldg. 10, Tsinghua Univ., No. 30 Shuangqing Rd., Haidian District, Beijing, Beijing, China, 100084

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EDUCATION BACKGROUND

Bachelor's Degree of Natural Science | **Tsinghua University**, Beijing, China 09/2020-06/2024

- Program: Mathematics and Applied Mathematics (*in progress, expected graduation on Jun. 2024*)
- GPA: 3.1/4.0
- Core Courses: *Advanced Linear Algebra, Fundamentals of Programming, Mathematical Analysis, User-Centered Interaction Design, Abstract Algebra, Ordinary Differential Equations, Measures and Integrals, Geometry and Symmetry*

Exchange Program | **KTH Royal Institute of Technology**, Stockholm, Sweden 08/2022-01/2023

- Program: Electrical Engineering and Computer Science
- Core Courses: *Measures and Integrals, Geometry and Symmetry*

SKILLS

- Programming Language: C/C++, JavaScript, Python, NodeJS, Rust, Shell
- Database: MongoDB, MySQL
- Tools: JetBrains, XCode, Vim, MatLAB, Docker
- Platforms: GitHub, Stackoverflow, CSDN
- Comprehensive Skills: leadership, organization, cooperation, logical thinking, problem-solving, independent learning and research

RESEARCH EXPERIENCE

Front-end Developer and Assistant Back-end Developer | **A Human-Computer Collaborative Tool for Training a Single Large Language Model Agent into a Network through Few Examples, Human-Computer Interaction Laboratory, Department of Computer Science and Technology, Tsinghua University**

02/2023-Present

Supervisor: Dr. Chun Yu

- Implementing the development of the user interface
- Assisting the back-end part to solve issues such as server configuration and software testing
- Helping with preparing annotated datasets for model training
- Updating the lab's official academic website

Object-Oriented Programmer | **A Framework for Optimizing the Plotting Functionality in MATLAB, Department of Computer Science and Technology, Tsinghua University** 09/2020-02/2023

- Developed an optimized MATLAB plotting framework using object-oriented programming (OOP) principles
- Applied modular design for enhanced efficiency and flexibility in plotting functions
- Strengthened proficiency in MATLAB and OOP principles
- Contributed to a more efficient and user-friendly plotting experience
- Completed through collaborative efforts within the team

Machine Learning Engineer | **Optimality Theories in Machine Learning, Tsinghua U** 09/2020-02/2023

- Implemented GDM (Gradient Descent Method) and SDM (Stochastic Descent Method) algorithms, incorporating penalty function and ALM (Augmented Lagrangian Method)
- Utilized Pyplot tool to visualize the machine learning process, creating gradient descent diagrams for multiple functions using Python programs

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Data Engineer and Full-Stack Programmer | **Python Web Scraping: Beautiful Soup for Data Gathering, Tsinghua University**

09/2020-02/2023

- Developed web scrapers using Python's Beautiful Soup library to back up real-time news data
- Rented a Tencent Cloud server for a year and deployed MongoDB database to store the new data
- Developed an iOS app displaying news hot searches and tested it on multiple developer accounts
- Registered a domain name and resolved it to the server, displaying the news list gathered
- Used automatic GitHub Action to store data and log into repositories, preparing for analysis with AI

Front-End Developer | **Pure Front-End Art Toolkits Combo, Tsinghua University** 09/2020-02/2023

- Created several pure frontend tool webpages deployed on GitHub Pages, featuring intricate code but no need for backend responses, ensuring stability
- Text-to-image tool using the HTML canvas tag, converting articles into long images with adjustable width, height, and margins
- Applied image splicing tool sortable.js library in JS, allowing sequential uploads and drag-and-drop sorting
- Used symmetric/asymmetric encryption tool to support AES-256, RSA, etc., directly operating in the frontend employing the webpage blob element, excluding extremely large files
- Introduced color palette tool, an auxiliary color adjustment tool inspired by the *Chinese Colors* website

Ruby Programmer and Writer | **Personal Blog, Tsinghua University**

09/2020-02/2023

- Deployed a blog using a self-built template, Jekyll, and GitHub Pages
- Enabled Disqus comments and Google Analytics monitoring support

STUDENT INVOLVEMENT

Director of Publicity and Design Department & Vice President | **Student Communication Association of Sanqin Culture of Tsinghua University** 09/2021-06/2023

- Supervised the daily operation of the association's public account, collation and dissemination of Sanqin culture
- Collaborated with other sections to help promote and find sponsorship for events
- Responsible for the staff arrangement of the department
- Launched a series of Shaanxi culture-related cultural and creative products
- Achievement: obtained more than 2,000 followers for THU Qin Association public number; set high-quality templates for the publicity design works; standardized the routine work with high Efficiency

Propaganda Department Member | **Chinese Students and Scholars Association at KTH Royal Institute of Technology, (CSSASE), Stockholm, Sweden**

09/2022-01/2023