

# JUNXI YAN

Department of Computer Science and Technology  
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## EDUCATION

**Tsinghua University, Undergraduate**

Beijing, China

B.S. in Computer Science and technology | B.S. in Economics

Sep. 2021 – Present

- GPA: 3.68/4.00
- Member of THU Natural Language Processing Group, advised by Prof. Zhiyuan Liu.

## PUBLICATIONS

1. **Tool Learning with Foundation Models** (<https://arxiv.org/pdf/2304.08354>)

Yujia Qin, Shengding Hu, Yankai Lin, ... **Junxi Yan**, ..., Maosong Sun. ArXiv 2023.4.

## RESEARCH EXPERIENCE

**THUNLP, Tsinghua University**

Beijing, China

Research Assistant to Professor Prof. Zhiyuan Liu

Aug. 2022 – Present

**LLM-driven AI agent (XAgent)**

- Released XAgent, an autonomous agent for complex task solving with enhanced consistency, stability, and human-agent interaction.
- Utilized Docker container to design a secure tool-system, enabling the agent to utilize and incorporate various tools within a protected environment.
- Designed datasets and trained the SFT model *ObjectLlama*, empowering the agent with tool invocation capabilities comparable to GPT-4.
- Designed diverse project application scenes, conducting benchmark tests and addressing real-world tasks.

**Tool learning with foundation models:**

- Comprehensive study.
- Formulated a standardized framework for tool learning with foundation models, culminating in the development of the BMTools toolkit by standardizing and automating the process of tool invocation.
- Conducted experiments and case studies under various scenarios including image generation, speech-to-text, and language translation, to validate the efficacy of the proposed framework.

**Tsinghua University (Department of Computer Science and Technology)**

Beijing, China

Team member of the Software Engineering course.

Mar. 2023 – June. 2023

**Instant messaging system(DMail):**

- Built a mature instant messaging system product in the span of one semester. Explored the feasibility of deploying a personal communication system anytime, anywhere, and delved into the rules and boundaries that software engineering projects should adhere to.
- Selected the best project for the Spring 2023 Software Engineering course.

## ADDITIONAL INFORMATION

**Additional Professional and Extracurricular Experiences**

- Member of Student Association for Science and Technology. Organized dozens of school - level science and innovation events, including but not limited to the Tsinghua University Big Idea Challenge, the THU Challenge Cup Academic Competition and the THU Drone Competition.
- Member of the Basketball Representative Team of SEM (School of Economics and Management). Won the 2022 THU Ma Yuehan Cup championship, the first championship in the past 16 years.

**Language Skills**

- TOEFL 101/120 (Reading 29, Listening 28, Speaking 21, Writing 23)
- Basic knowledge of Greek; Completed the course Greek (Second Foreign Language)

**Technique Skills**

- Proficient in C/C++, Python, JavaScript, Linux, Latex, Stata.
- Familiar with various neural networks and state-of-the-art deep learning techniques.