

# Fan Gao

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🌐 [fire-sale.github.io](https://fire-sale.github.io)

## EDUCATION BACKGROUND

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### University of Wisconsin, Madison

*Major in Computer Science, Mathematics*

GPA: 3.921/4.00.

Research Interests: Systems for machine learning and big data, distributed systems, formal methods.

**Madison, United States**

*Sept. 2019 - Est. Dec. 2021*

### University of Electronic Science and Technology of China

*Major in Computer Science and Technology (Honors)*

GPA: 3.92/4.0. Top 5%.

**Chengdu, China**

*Sept. 2017 - June 2019*

### Israel Institute of Technology

*Summer Session Visiting Student with Full Scholarship*

**Haifa, Israel**

*July 2018 - Aug. 2018*

## Competitions

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### ACM-ICPC International Collegiate Programming Contest

*Nov. 2019*

- Gold Prize (ranked 3/180, 1.6%) in North Central North America Regional Contest. ICPC is the most famous college-level competitive programming contest in the world. Coach: Prof. Dieter van Melkebeek.

### Huawei Code Craft Challenge

*Mar. 2018 - Apr. 2018*

- Designed algorithms to predict future demand for cloud services and allocate virtual machines optimally.
- Silver Prize (top 10 in 1515 teams, 0.7%). Won the green card of Huawei Research Intern.

## EXPERIENCE

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### Independent Research Under Prof. Shi Gu

*Research Assistant*

**Chengdu, China**

*May. 2018 - Sept. 2018*

- Exploring graph neural networks, neural style transfer and machine learning for 3D data.

## Projects

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### Mini Distributed Key-Value Database (In progress)

*Apr. 2020 - May. 2020*

- Aims to develop a high-available distributed KV database in Go that supports distributed transactions, balance scheduling, Paxos-like algorithm for distributed consensus and TLA+ to verify correctness.

### Adaptive Concurrency Control in Main Memory Databases

*Feb. 2020 - Apr. 2020*

- Course project in CS 839 (Design Next-Gen Database). Designed adaptive concurrency control protocols based on system monitoring and workload forecasting and dynamically adopt different concurrency control protocols according to some key factors (contention, abort rate, etc.).

### Precision Agriculture Based on Unmanned Aerial Vehicles

*July 2018 - Oct. 2018*

- We used comprehensive methods like Mobile SSD, NVDI to predict crop yield and monitor the health status of crops. This project is based on a DJI Inspire UAV and PaddlePaddle deep learning framework.
- National Second Prize (top 10 in 1049 teams, 1%) in the China Artificial Intelligence Innovation Contest. Won the green card of Baidu Intern and 10,000 RMB bonus.

### Sentiment-controllable Stylic Music Generation

*Dec. 2017 - Mar. 2018*

- Given input sentences, this project aims to create music that matches the emotion of the texts. The model contains two parts: a text sentiment detector using LSTM; a stylistic composer using sequence-GAN.
- Selected as one of the best projects (top 10 in 583 projects, 1.7%) in Microsoft Student Club Practice Studio Program.

## Extracurricular Activity

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### Microsoft Student Club @ UESTC

*Vice-Chairman, Leader of Tech Department*

*June 2018 - June 2019*

- Organized coding training for freshmen and hosted weekly tech talks.
- Won the certificate of “Star of the Club” from Microsoft Research Asia.

## SKILLS

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- Programming languages: experienced in C++/Python, familiar with Java/Rust/Haskell/JS/Go/L<sup>A</sup>T<sub>E</sub>X/Matlab
- Selected courses: data structures, algorithms, AI, ML, computation theory; computer organization, database, network, programming languages, parallel computing, design next-gen database.