# Fan Gao

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## EDUCATION BACKGROUND

**University of Wisconsin, Madison**                                                    **Madison, United States**
*Major in Computer Science, Mathematics*                                                *Sept. 2019 - Est. Dec. 2021*
GPA: 3.921/4.00.
Research Interests: Systems for machine learning and big data, distributed systems, formal methods.

**University of Electronic Science and Technology of China**                            **Chengdu, China**
*Major in Computer Science and Technology*                                              *Sept. 2017 - June 2019*
GPA: 3.92/4.0. Top 5%.

**Israel Institute of Technology**                                                      **Haifa, Israel**
*Summer Session Visiting Student with **Full Scholarship***                             *July 2019 - Aug. 2019*

## Competitions

**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

**Independent Research Under Prof. Shi Gu**                                              **Chengdu, China**
*Research Assistant*                                                                     *May. 2018 - Sept. 2018*

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

## Projects

**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

**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

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