# Haolin Li

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## Education

**University of Science and Technology of China**                    09/2020 - 07/2024

B.Eng. in Computer Science and Technology

- **85.21**/100, Wang Xiaomo **Talent Program**, USTC **Silver** Scholarship (**10%**); 680/750 in GaoKao (Top **0.1%**)
- Linear Algebra(90), Mechanics(95), Stochastic Processes(96), Computer Networks(90), Pattern Recognition(92)
- English Proficiency: TOEFL: **100** (L: 27, R: 26, W: 24, S: 23); GRE: **322** (Q: 170, V: 152, AW: 3.5)

## Publications and Manuscripts

**BLIT: Battery Less, IC less and Wireless Textile Sensing Interface**          CHI'24 Under Review

Advisor: Prof. Xing-Dong Yang

## Research Experience

**FeelWeave: Innovating Textile-Based Tactile Feedback in Wearable Garments**          iXLab, SFU

Research Intern, Advisor: Prof. Xing-Dong Yang                    09/2023 - 04/2024

- Embed All-textile Haptics with SMA material, Higher Reading Rate with Parallel Computing and more sensitive sensing with Machine Learning in textile sensor system for tactile response and samrt garment shape changing.

**BLIT: Battery Less, IC less and Wireless Textile Sensing Interface**          iXLab, SFU

Research Intern, Advisor: Prof. Xing-Dong Yang                    07/2023 - 09/2023

- A textile sensing interface that **eliminates the need** for ICs, batteries, and connectors in textiles, using near field electromagnetic coupling for wireless power transfer and data acquisition from **textile based multi sensor** circuits
- Skills: **Circuit Analysis** and Experiments in Complex Fuctions, **sewing programming** and manilpulation, textile-related fabrication, 3D Printing, High-Performance Curve Fitting Iteration, Thesis Composition and Review

**Human-AI Interaction Applications in Recommender Systems**          RecSys Lab, USTC

Research Assistant, Advisor: Prof. Defu Lian                    06/2022 - 06/2023

- User Controllable **Bubble filters** for Recommendation System to eliminate outdated data and redundancy; **Dynamic Learning process** with user Interaction to reduce unfairness and bias in content recommendation
- Contributor of **RecStudio**, a unified, highly modularized recommendation library based on PyTorch.

## Selected Projects

**SDE Team leader in PatMate: An Android app**                    03/2022 - 11/2022

- An Android app combining **AR pet** companion, socializing and information/content stream recommendation
- **Full stack** Android Development (AndroidStudio, Mysql, MongoDB, UI Design), AR Development (Unity)

**Simple Compiler for C-minusf**                    10/2022 - 01/2023

- Consisted of Parser, LLVM IR generator to support lexical analysis, grammar analysis and code generation
- Involving optimization process, with the method of **GVN** (Global Value Numbering), Flex, Bison, LLVM-IR

**Handmade Simple Operating System Kernel**                    03/2022 - 06/2022

- A Minimum Kernel with Shell and Memory Allocator (sbrk) that supports vga output, function, Command Implementation and Memory Management; Skills: Qemu, GCC Tool Chain and **Assembly Programming**

**Transformer Decoder Applications**                    06/2023 - 07/2023

- For Completion of the Collected Works of Shakespeare, iterating to get the next word untill reaching EOS token
- Using n gram as a **Language Model**, assigning a probability score to each option with **Self supervised Learning**

**Concurrent-commands Pipeline CPU by Verilog**                    03/2022 - 06/2022

- Designed a pipeline CPU that supports data cache with replacing strategy of **LRU** and **FIFO** and branch prediction with **BTB** (Branch Target Buffer) and **BHT** (Branch Prediction Table); Skills: Architecture Design, **Verilog HDL**

**Handmade Blockchain Trading System**                    05/2023 - 06/2023

- Designed from scratch a Blockchain Trading System with frontend with **Golang, Flask and HTML**
- Involving elliptic curve cryptography, UTXO uasge and verification, Merkletree structure, Bitcoin transactions