# Tianyu Fang

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## Education

**Postgraduate** Sept. 2024 - Present
**The University of Hong Kong**

**B.S. in Electronic and Information Engineering** Sept. 2020 - July 2024
**Hunan University** GPA: 3.63/4.0 | Final Thesis: 92/100

## Publication

**QuantWear: Wear Particle Monitoring of Jet Engine Based on Quantum Sensing** 2024
*Under Review, ACM Mobicom*

**Progress and Comparison in NDT, Imaging and Recognition Technology for Defects of Chips** 2023
***Tianyu Fang**, Junshu An, Qi Chen, Yunze He*, Hongjin Wang | Nondestructive Testing & Evaluation (Taylor & Francis)*

**Application Analysis of Nondestructive Testing Technology in Aerospace Engineering** 2023
*Jianbin Su*, **Tianyu Fang**, Yunze He, Fenglin Zhang | The 3rd Aviation Engineering Forum, Hangzhou, April*

## Design & Contest Experience

**MCM (Mathematical Contest in Modeling)** Dec. 2021 - May 2022
Coding in Matlab and Writing

- Part of data processing and models establishment for an investment forecasting of bitcoin & other currency
- Wrote the final dissertation (with memo letter)

**Hunan College Students Electronic Design Contest** Mar. 2022 - Aug. 2022
Coding and Hardware Implementation

- A one-click signal measurement auto-device for measuring and displaying modulation degree and max frequency deviation, identifying modulation types, and outputting the original un-modulated signal (DDS, STM32F4&F1, comparator, envelope detector, USart Hmi)
- Tracking trolley: OpenMv camera for tracking; realize the wired or wireless communication between 2 ARM-XMU boards or board with OLED, Bluetooth, OpenMv, etc. modules

**Course Design** Dec. 2022 - May 2023
Coding in Matlab (Simulink) or Simulation in CST Studio

- Matlab (Simulink): Analyzed the performance of the digital baseband transmission system; realized noise reduction by spectral subtraction algorithm; analyzed impedance matching through the Smith chart
- CST Studio: Simulated the performance of mobile phone antennas

## Work Experience

**Research Intern** | ***Advised by: Prof. Yanwen Wang*** June 2024 - Aug. 2024
Hunan University Changsha, China

- LoRa: physical layer coding and hardware implementation (USRP, Arduino, Raspberry Pi); application layer literature research
- Quantum sensing: a quantum imaging system to monitor the quantity and 3D shape of wear particles within high-brightness and high-speed jet stream to enhance jet engine health monitoring (EHM)

**Software (ADFX) Intern** June 2023 - Sept. 2023
ACTRI: Aeronautics Computing Technology Research Institute Xi'an, China

- Focused on the network development process based on time-diffrent protocols: AFDX→TTP/TTE→TSN
- Checked the differences in reliability and other performance between military, civilian airborne and carborne
- Configured and driver-debugged the 615A switch

## Selected Honors and Awards

**The Honorable Mention - MCM (Mathematical Contest in Modeling)** Spring 2022
COMAP (the Consortium for Mathematics and Its Application)

**Distinction Undergraduation Scholarship** Spring 2024
TBEA Co., Ltd

**Distinction Award with Second-Class University Scholarship** Fall 2022
Hunan University

**Distinction Award with Second-Class University Scholarship** Fall 2023
Hunan University

## Skills

**Languages**: English (Proficient), Chinese Mandarin (Native)
**Programming**: C, MATLAB, Python, Keil, CST Studio, Protues, Multisim
**Electronics Design Automation Software**: Xilinx Vivado
**ML & DL Framework**: PyTorch
**Document Creation**: Microsoft Office Suite, LaTeX, Markdown

## Relevant Coursework

- Signal and System
- Digital Signal Processing
- Communication Principles
- Sensors and Testing Technology
- Probability and Mathematical Statistics
- Computing and Artificial Intelligence
- High-performance Computer Architecture
- Fundamentals of Network Technology