

SIXU TAN

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EDUCATION

Southern University of Science and Technology

Shenzhen, China

B.E in Computer Science and Technology

Sep 2019 – Present

- **GPA** : 3.78/4.00 (ranking top %15, 26/166)
- **Core Courses:**
 - Computer Organization (96, A);
 - Computer Networks (100, A+);
 - Algorithm Design and Analysis (98, A+);
 - Introduction to Artificial Intelligence(90, A-).
- **Selected awards:**
 - First Prize in NUS Summer Workshop2021 AIoT cluster;
 - Third Prize in Mathematics Competition of Chinese College Student;
 - Third Prize in SUSTECH Programming Contest;
 - Winning Award in Contemporary Undergraduate Mathematical Contest in Modeling;
 - Successful Participant Award in MCM/ICM;
 - Second Prize for Excellent Student Scholarship in SUSTECH (top 5-15%).

University of California, Berkeley

CA, U.S

Exchange Student

Jan 2022 – Present

- Taking CS162 Operating System, CS161 Computer Security, CS182 Deep learning.
- Supported by the Second Scholarship of SUSTECH Study Abroad Program (2022).

National University of Singapore

Singapore

Summer Workshop

May 2021 – Aug 2021

- **First prize** in Artificial Intelligence of Things cluster (1/36).
- Final Grade **A+**.
- Supported by Second Scholarship of SUSTECH Study Abroad Program (2021).

RESEARCH EXPERIENCE

3D Acoustic Strength Based Motion Tracking

Advisor: Prof. Jin Zhang (Associate Professor at SUSTECH)

Aug 2021 – Present

- Designed and Implemented a 3D acoustic (continuous wave) based motion tracking system using commercial speakers and mobile phones. This system is able to track large range while the array gaps of speakers are small. Achieved accuracy of **0.97** in distance tracking, **0.96** in angle tracking, and **0.92** in trajectory tracking.
- Designed Frequency Division Multiplexing scheme of speakers, enhanced trajectory accuracy in 3D space by 23%.
- Designed angle fix algorithm which solved the projection angle problem, enhanced angle tracking accuracy by 10%.

IMU-based Smart Water Bottle

Advisor: Prof. Tan Wee Kek (Associate Professor at NUS)

May 2021 – Aug 2021

- Designed and Implemented a smart bottle system that accurately estimate the amount of water intake through IMU and machine learning methods. Achieved estimation accuracy of 0.86 in wild test.
- Implemented algorithm to extract the actual sip time using rotation status computed from 2 axes, enhanced the accuracy from 0.56 to 0.86.
- Constructed edge-end-cloud structure to process data and developed user interface.

OTHER SELECTED PROJECTS

P2P file Sharing System (Marked 100/100)

- Designed and Implemented a fast P2P file sharing system with congestion avoidance mechanism in python, it eventually ran **3 times faster** than basic client-server model on benchmark.
- Implemented threadspool-based optimization method, accelerated the model by 28%.
- Implemented tit-for-tat mechanism, achieved automatic selection of high-speed nodes.

CPU on FPGA development board (Marked 100/100)

- Implemented a single cycle CPU using **Verilog** on FPGA, supported multiple I/O (keyboard, switches, 7-digit tube, UART), and was capable of running MIPS instructions.

Covid-19 Dashboard (Marked 100/100)

- Built a covid data visualization web app using **springboot, vue, JAVA, and PostgreSQL**.
- Implemented web crawler which automatically update the data base.

3D Pac-man

- From scratch, designed and implemented a 3D pac-man video game using **C# and Unity**. The game is well-structured with modern design principles, and can be easily extended.
- Implemented and optimized the movement control algorithms, which replicated the feel of original 2d pac-man.
- Designed and Implemented the moving view system.

ADDITIONAL INFORMATION

Computer and Language Skills

- Languages: Java(skilled), C++(skilled), Python(skilled), Bash(basic), C(skilled), R(basic), SQL(skilled), Go(basic), Matlab(skilled)
- Web Development: JavaScript, HTML/CSS
- Technology: Git, Docker, LATEX, PostgreSQL

Extracurricular Experiences

- Vice leader of the college basketball team,
- Leader of the college swimming team,
- The best translation award in the campus 2019 Chinese-English poems reading contest,
- The vice minister of the college propaganda ministry.