ZIYUE DANG

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Education

Tsinghua University   **Aug. 2019 – Jun. 2023**
Overall GPA: *3.87/4.0*   *Beijing, China*

B.Eng. in Computer Science and Technology, Cum Laude

- **Relevant Coursework:** Theory of Computer Network (A-), Operating Systems (A-), Introduction to Machine Learning (A), Software Engineering (A), Database Special Topic Training (A), Data Structures (A-), Human Computer Interaction Theory and Technology (A-), Fundamentals of Computer Graphics (A-), Principles and Practice of Compiler Construction (A), Computer Network Security Technology (A), Wireless and Mobile Network Technologies (A-)

B.Sc. in Statistics (Minor)

- **Relevant Coursework:** Introduction to Causal Inference (A), Probability and Statistics (A), Statistical Inference (P), Introduction to Data Science (A-), Linear Regression Analysis (A-), Experiments in Mathematics (A), Multivariate Statistical Analysis (P), Introduction to Bayesian Statistics(P)

Research Interests

- Mobile Computing
- Pervasive Computing
- IoT

Language Proficiency

TOEFL iBT: 114 (R30 + L30 + S24 + W30)
GRE: Verbal - 166, Quantitative - 170, Analytical Writing - 4.5
Japanese-Language Proficiency Test: JLPT N2 level

Honors

Stellar Volunteer at Haidian District	Oct. 2023
Outstanding Graduate of Dept. of Computer Science and Technology	Jun. 2023
Oei Ek Tjhong Scholarship for Academic Excellence	Dec. 2022
Guangzhou Pharmaceutical Holdings Scholarship for Academic Excellence	Dec. 2021
Scholarship for Devotion in Student Activities	Dec. 2021
Scholarship for Devotion in Volunteer Service	Dec. 2020

Highlighted Projects

Implementation of the TAGGED Branch Predictor | *C++*   **Jun. 2022**
Course project for Computer Architecture (2022 Spring)   *Tsinghua University*

- Implemented the branch prediction algorithm based on the paper: *A case for (partially) tagged Geometric History Length Branch Prediction*. André Seznec, Pierre Michaud. Journal of Instruction Level Parallelism (JILP), 2006.
- Reached a performance of 3.181 mispredictions per thousand instructions using the testcases given in Championship Branch Prediction 2014.
- Source code is available at Github: https://github.com/Syldavian/TAGGED-Predictor

Implementation of a 5-stage Pipelined CPU | *Verilog, Xilinx Vivado*   **Nov. 2021**
Course project for Computer Organization (2021 Fall)   *Tsinghua University*

- Implemented the paged memory management unit (MMU) and translation lookaside buffer (TLB) for the group project.
- Source code is available at Github: https://github.com/wzf2000/cod21-grp58

Image Renderer based on the Path Tracing Algorithm | *C++*   **Jun. 2021**
Course project for Fundamentals of Computer Graphics (2021 Spring)   *Tsinghua University*

- Implemented the path tracing algorithm based on Kevin Beason's Smallpt project.
- Finished the integration of the additional features to the algorithm, including anti-aliasing, soft shadows, texture mapping, depth of focus and parametric surface intersection.
- Used bounding boxes to speed up the algorithm.
- Source code is available at Github: https://github.com/Syldavian/simple-path-tracing

Skills

Programming Languages: Python, C/C++, R, Java, JavaScript/TypeScript, C#, Verilog, Rust
Libraries, Frameworks and Tools: PyTorch, React, Django, Android Studio, Git

Publications

[1] **Ziyue Dang**, Fan Dang, and Yankun Yuan. "LSTM-Driven Scheduling for Energy-Efficient Crop Monitoring in Wireless Networks". In: *2023 20th Annual IEEE International Conference on Sensing, Communication, and Networking (SECON)*. IEEE. 2023, pp. 41–47.

[2] **Ziyue Dang**, Qi Yang, Zhaokun Deng, Jiancheng Han, Yihua He, and Shuangyi Wang. "Digital Twin-Based Skill Training With a Hands-On User Interaction Device to Assist in Manual and Robotic Ultrasound Scanning". In: *IEEE Journal of Radio Frequency Identification* 6 (2022), pp. 787–793.

[3] Jiawen Chen, **Ziyue Dang**, Lingkun Li, and Fan Dang. "Optimization of Ultrasonic Respiratory Signals based on Supervised Learning". In: *2022 IEEE 28th International Conference on Parallel and Distributed Systems (ICPADS)*. IEEE. 2023, pp. 354–361.

[4] Ruiqing Wang, Kebin Liu, **Ziyue Dang**, Xu Wang, Fan Dang, Yue Sun, Yuang Tong, Haitian Zhao, and Yunhao Liu. "Understanding the Quality of User Experience in Telepresence Systems from an Information Theory Perspective". In: *IEEE Transactions on Consumer Electronics* (2024).