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○ A-Dying-Pig

Yiran Lei

Education

2020 – 2023 🔖 **M.E., Department of Computer Science and Technology, Tsinghua University**
GPA 3.76 / 4.0
I am expected to graduate in June 2023 and start my Ph.D from Fall 2023.

2016 – 2020 🔖 **B.E., School of Software, Tsinghua University**
GPA 3.65 / 4.0
Thesis title: *Track Multiple Objects across Different Points of Views*.

Research Experience

2020.9 – Present 🔖 **Routing Group, Tsinghua University**
I am a master student advised by Professor *Mingwei Xu*. My research interests include Network Telemetry and Programmable Data Planes.

2022.9 – Present 🔖 **Paul G. Allen School of Computer Science, University of Washington**
As a visiting student, I work with Professor *Arvind Krishnamurthy* on smart systems with programmable switch and smart NIC.

2021.9 – 2022.8 🔖 **Distributed Systems Lab, University of Pennsylvania**
I worked closely with *Vincent Liu* on queue measurement in the data plane.

2019.6 – 2019.8 🔖 **Internet Research Lab, UCLA**
I visited Professor *Lixia Zhang* and contributed to NDN home IoT system.

Research Publications

[1] **Yiran Lei**, Liangcheng Yu, Vincent Liu, and Mingwei Xu. 2022. Printqueue: performance diagnosis via queue measurement in the data plane. In *ACM SIGCOMM 2022 Conference (SIGCOMM '22), August 22–26, 2022, Amsterdam, Netherlands*, ACM, New York, NY, USA, 14 pages. 🔗 DOI: `10.1145/3544216.3544257`.

[2] **Yiran Lei**, Yu Zhou, Yunsenxiao Lin, Mingwei Xu, and Yangyang Wang. 2021. Dove: diagnosis-driven slo violation detection. In *2021 IEEE 29th International Conference on Network Protocols (ICNP)*, 1–11. 🔗 DOI: `10.1109/ICNP52444.2021.9651986`.

Teaching

2021.9 – 2022.1 🔖 TA in the course, *40240513 - The Principle of Computer Network*.
I helped students with assignments, gave supplementary lectures on IPv6, organized student-teacher meetings and exams.

Skills

Math	🔖	Stochastic Process, Combinatorics, Calculus, Linear Algebra, Algorithms
Languages	🔖	English: TOEFL iBT 112 (30L, 29R, 25S, 28W), Chinese
Coding	🔖	P4, Python, C/C++, Javascript, Java, Assembly Language, SQL
System	🔖	Tofino, Mininet, Linux Kernel, Raspberry PI, Arduino, TinyOS

Skills (continued)

Web Dev   Django, Vue.js, HTML5, Flask

Awards

2021   Fellowship for Comprehensive Excellence (Second Class), Tsinghua University

2018   Second Award in Contemporary Undergraduate Mathematical Contest in Modeling, China

   Honorable Mention in Mathematical Contest in Modeling, USA

2017   Scholarship for Excellence in Study, Tsinghua University

Projects

2021   **Write System Calls**, implementing fork, exec, spawn, link, user shell on *ucore* OS
C based. Grasp linux kernel and user space, file system, trap, system calls.

2019   Reproduce the result of "*Deferred Neural Rendering: Image Synthesis using Neural Textures*"
OpenGL and UNet based. Implement multiple lighting models, e.g., Blinn-Phong and physical lighting model.

   LowSQL Database, a high performance SQL database
Java based. Use B+ tree indexing, block storage, and LRU caching for acceleration.

2018   **MASM Assembler**, translating assembly language into machine code
MASM based. Practice knowledge of compiler and linker.

   Run Catch Game, a light-weighted 3D real-time battle game on *WeChat*
Layabox as game engine. Construct 3D models and scenes. Support online real-time playing.

   Contest Platform, an online system to hold contests for college students
Django and Vue.js based. Design user-friendly interface, mechanisms to enhance security and support high concurrency.

   FTP server and client, implementing File Transfer Protocol
Socket based. Implement programs according to RFC, which function well with commercial FTP server and client.

2017   **Object Classification**
Tensorflow based.

   XV6 GUI, adding graphical interfaces to XV6 OS
Understand the principles of modern OS and details of pixel rendering.

   Gwent: The Witcher Card Game, a self-made version of the *game*
QT based. Complicated game logic, program design, and graphical interfaces.

   Memory Leak Detector, a C++ library to discover memory leak
Check whether a *new* expression is followed by corresponding *delete*.

2016   **My War Game**, a self-made version of the 2D game *worms reloaded*
C based. Double buffer rendering and intricate game logics.