Yinchen Ni

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: Google Scholar Profile
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Education

- **Shanghai Jiao Tong University Global College** — Shanghai, China
  M.S. Thesis Proposal: Real-Time Scheduling on Heterogeneous Computing Architectures — *Sep. 2024 - Sep. 2026*
  Research Interests: Real-Time Systems; Heterogeneous Computing; Operating System; Computing Architecture.
- **University of Michigan - Shanghai Jiao Tong University Joint Institute** — Shanghai, China
  B.S. in ECE, Minor in CS, DS; GPA: 3.82/4.0; Rank: 13/220 — *Sep. 2020 - Aug. 2024*

Selected Publications

- **Y. Ni**, Y. Xu, J. Chen, J. Li, C. Gill, X. Zhang, Y. Jin and A. Zou, "MATCH: Real-Time Scheduling of Multiple and Parallel Data Copies in Heterogeneous Architectures," *2025 Real-Time and Embedded Technology and Applications Symposium.*
- **Y. Ni**, T. Ma, J. Chen, C. Yang, S. Ye, Y. Xu, Y. Jin and A. Zou, "HARD: Hardening Real-Time Scheduling and Analysis for Accelerator Enabled Computing," *2025 Real-Time and Embedded Technology and Applications Symposium.*
- **Y. Ni**, J. Zhu, Y. Jin and A. Zou, "RTHeter: Simulating Real-Time Scheduling of Multiple Task in Heterogeneous Architectures", *2025 Design, Automation and Test in Europe Conference.*
- Y. Xu, **Y. Ni**, T. He, R. Sun, Y. Jin and A. Zou, "Real-Time Scheduling and Analysis of Fixed-Priority Tasks on A Basic Heterogeneous Architecture with Multiple CPUs and Many PEs," *2025 IEEE Transcations on Computers.*
- J. Chen, Y. Xu, **Y. Ni**, Y. Ma and A. Zou, "RICH: Heterogeneous Computing for Real-Time Intelligent Control Systems", *2025 Design, Automation and Test in Europe Conference.*

Research Projects

- **Efficient Computing Hardware and System Lab** — Shanghai
  Research Assistant, Advisor: Prof. An Zou — *Sept. 2022 - Present*
  - **MATCH**: Full-stack scheduling and timing analysis framework, for **multiple and parallel data-transfer** resources on heterogeneous platforms, improved schedulability by 144%;
  - **HARD**: novel scheduling for accelerator-based computation, achieved by **fine-grained timeslot allocation**, tight response-time analysis, and **kernel-level implementation**, reduced theory-practice gap by 45.1%;
  - **RTHeter**: A **hierarchical simulator** for agile design-space scheduler exploration and **RL-based scheduling** policy discovery in real-time heterogeneous systems.
- **SAVE: Car Detection System on Raspberry Pi** — Capstone Design
  Led a 5-member team, Course Project in Advanced Embedded Systems — *Sept. 2023 - Dec. 2023*
  - Designed cyclist equipment with safety **embedded** system; Built a web server to allow **real-time** monitoring on both computers and mobiles; Improved program execution speed while extending battery life by **scheduling**.

Teaching and Working Experience

- **Teaching Assistant and TA Mentor, Global College** — Hybrid
  Courses: Intro to Programming, Data Structures, Honors Math, Discrete Math, Big Data — *Sept. 2021 - Present*
  - Led recitation classes and labs; Graded papers; Onboarded and mentored new TAs.
- **AI Platform Engineering Intern, Intel** — Shanghai
  Contribute to BigDL: fast, distributed, secure AI for Big Data on Intel hardware — *Dec. 2022 - May. 2023*
  - Enhanced CI/CD workfows and validated distributed Al training on Yarn/K8s clusters; Developed recommendation example codes; Released the corresponding toolkit with docker-compose, k8s, helmchart.

Honors and Awards

- Third Prize, Embedded System Software Competition (ESSC) — Oct 2025
- Chinese National Scholarship (Top 2%) — 2021, 2023, 2025
- Silver Award, UM-SJTU JI Capstone Design Expo (Top three) — Dec 2023
- Annual Outstanding TA Award, UM-SJTU JI (Top five) — July 2023
- Finalist, American College Math Modeling Competition (Top 2%) — May 2022

Student Activity

- **UM-SJTU JI Student Union - Tech Department**
  Mechanical keyboard DIY workshop; Linux install party. — *March 2023 - Present*
- **President of SJTU Piano Association**
  Conduct offline Piano Concert opening for all SJTU students. — *June 2021 - July 2022*

Skills Summary

- **Languages**: Mandarin (Native), English (Fluent, CET6: 641, Toefl: 102, GRE: 319)
- **Programming**: C/C++ (linux, embedded), Python, Shell Scripting, CUDA, LaTeX, Git, Docker