

Yinchen Ni

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EDUCATION

- **University of Michigan - Shanghai Jiao Tong University Joint Institute** Shanghai, China
• *SJTU EHPCL* ✉; *M.S. in CS* Sep. 2024 - Present
Research Interests: Real-time scheduling algorithm on heterogeneous / embedded computing architectures;
Mathematical timing analysis on real-time tasks; Operating system and the kernel support for accelerators and AI applications; Simulator for general real-time heterogeneous architectures.
- **University of Michigan - Shanghai Jiao Tong University Joint Institute** Shanghai, China
• *B.S. in ECE, Minor in CS; GPA: 3.82; Rank: 13/220* Sep. 2020 - Aug. 2024
Software Related Courses: **Hardware Related Courses:**
 - *VE472, Analysis and Tools for Big Data.(A+)* ◦ *VE373, Design of Microprocessor Based Systems.(A)*
 - *VE482, Intro. to Operating Systems.(A+)* ◦ *VE473, Advanced Embeded Systems.(A)*

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 RTAS.
- **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 RTAS.
- **Y. Ni, J. Zhu, Y. Jin and A. Zou**, "RTHeter: Simulating Real-Time Scheduling of Multiple Task in Heterogeneous Architectures", 2025 DATE.
- **J. Chen, Y. Xu, Y. Ni, Y. Ma and A. Zou**, "RICH: Heterogeneous Computing for Real-Time Intelligent Control Systems", 2025 DATE
- **R. Sun, Y. Ni, X. He, J. Zhao and A. Zou**, "ONE-SA: Enabling Nonlinear Operations in Systolic Arrays For Efficient and Flexible Neural Network Inference," 2024 DATE.

WORKING EXPERIENCE

- **AI Platform Engineering Intern, Intel** ☪ Offline
• *Contribute to BigDL: fast, distributed, secure AI for Big Data on Intel hardware* Dec. 2022 - May. 2023
 - Project **orca**: Refactored GitHub repo CI/CD workflow, eliminated unnecessary dependencies, added daily/nightly testing; Validated Yarn, K8S cluster setting, updated corresponding tutorials and documents; Created docker file for orca under different python environments;
 - Project **fresian**: Developed Big Data recommendation example codes, created corresponding documents; Released the corresponding toolkit with docker-compose, k8s, helmchart.
- **Teaching Assistant, UM-SJTU JI** ✉ Hybrid
• *Courses: Intro to Programming, Data Structures, Honors Math, Discrete Math, Big Data* Sept. 2021 - Aug. 2024
 - Led recitation classes in English; Designed course projects and labs; Graded homework and exams.

SKILLS SUMMARY

- **Speaking:** Mandarin (Native), English (CET6: 641, Toefl: 102, GRE: 319)
- **Libraries:** Numpy, Matplotlib, Pandas, OpenCV
- **Programming:** C/C++ (linux, embedded), Python, Shell
- **Frameworks:** CUDA, Hadoop, Spark, K8S, Pytorch
- **Scripting, Matlab, MySQL, Java**
- **Tools:** L^AT_EX, Git, Docker, Origin Lab, Nsys Profile

PROJECTS

- **(CapStone) SAVE: Car Detection System on Raspberry Pi** ☪ ⬇:
 - 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**.
- **Big Data Recommendation system on Million Song Dataset** ☪ ⬇:
 - Transferred data into **avro** in parallel; Examined data basic property by **Drill** sql query; Used both **Spark** and **Mapreduce** to recommend the most similar song with customization metrics; Reduced data dimension by **MLlib** PCA and predicted the year of songs; Demonstrated by L^AT_EX beamer and A1 poster.
- **Multi-threaded DataBase Optimization** ☪:
 - Supported basic **SQL** conditional queries; Optimized single query for large table 40% faster by **multi-threading**; Detected optimized thread number based on table size automatically.

HONORS AND AWARDS

- 2023 National Scholarship - Oct. 2023 / 2021 National Scholarship - Oct. 2021
- 2023 Silver Prize on Institutional Winter Capstone Design - Dec. 2023
- 2023 John Wu & Jane Sun Excellence Scholarship - Nov. 2023
- Finalist in 2022 American College Math Modeling Competition - May. 2022