Shengtao Yao

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EDUCATION

New York University *Sept 2022 – Now*
B.A. in Computer Science minor in Mathematics

- **Relevant Coursework:** Data Structures, Algorithms, Operating Systems, Parallel Computing, Applied Internet Technology, Introduction to Robotics, Probability, Statistics, Ordinary Differential Equations, Machine Learning, Deep Learning, Computer Vision
- **Dean's List (All Semesters)** , New York University

WORKING EXPERIENCE

Courant Institute of Mathematical Sciences *New York, NY*
Research Intern, advised by Prof. Sumit Chopra *Sep 2025 – Now*

- Developed a volume-level prostate cancer classifier directly from raw multi-coil MRI k-space, implementing coil sensitivity estimation, channel compression, inverse FFT reconstruction, and volumetric normalization pipelines
- Designed and benchmarked 3D CNN for full-volume classification; evaluated AUC/ROC and sensitivity-specificity trade-offs across patient cohorts and acquisition protocols.

Huawei Technologies Co., Ltd. *Shanghai, China*
Software Engineer Intern *June 2024 – Aug 2024*

- Developed a high-performance C++17 thread-pool runtime for L2RAT featuring lock-free multi-producer/multi-consumer queues and a work-stealing scheduler, enabling low-latency task dispatch under telecom baseband workloads.
- Implemented NUMA-aware per-thread local queues, randomized work-stealing, and CPU-affinity pinning, reducing dispatch-path stalls by **41%** and improving p99 latency stability in simulated BBU pipelines.
- Designed a virtual CPU-pool allocator and automated zombie-process cleanup, decreasing idle CPU cycles by **18%** and improving throughput by **22–27%** under sustained L2RAT traffic.
- Built a perf-driven flame-graph visualization tool to identify queue-contention hot paths; optimized enqueue/dequeue fast paths and reduced contention time from **48%** → **15%**, significantly improving scheduling efficiency.

TEACHING EXPERIENCE

Courant Institute of Mathematical Sciences *New York, NY*
Teaching Assistant Supervised by Prof. Jocelyn Chen, Operating System *Sept 2024 – Now*

- Grade all labs and exams for the course and held weekly office hours for debugging & clarification
- Wrote automatic grading scripts for OS Utility & VM lab, which was used for a class of up to 200 students.

Projects

Recurrent JEPA WorldModel	*PyTorch, VICReg, Representation Learning*	*GitHub*
Weensy OS	*C, x86-64, VM, Process Allocation, Concurrency*	*private (course policy)*
TSH Shell	*C, UNIX, Job Control, Signal Handling*	*GitHub*
Handwriting Generation	*VQ(Vector Quantization), Transformer, Finetune on (IAM, CVL, RIMES)*	working on

COMPETITIONS

- **International Collegiate Programming Contest (ICPC)** (2025) *Codeforces*

SKILLSET

Language & Libraries: (Proficient) Python, C/C++, Pytorch, OpenCV, scikit-learn; (familiar) OCaml, Java, Javascript, Pandas, SciPy, SQL
Tools: Linux, Git, gdb, Docker, statsmodels, containerization, CI/CD, Agile, JSON
Framework & Methodologies: HPC/Research Tooling, REST APIs, Agile