

Shuntian (Vincent) Liu

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PhD student in Computer Science

Education

- 2026–2030 **PhD in Computer Science, University of Cambridge**
Supervised by Martin Kleppmann.
Working on the [Coln database](#).
- 2019–2023 **BA & MEng Hons Computer Science, Magdalene College, University of Cambridge**, Grade: First class
Research project: Eventual Consistency in Mnesia.
Modules include: Distributed Ledger Technologies: Foundations and Applications, Object-Oriented Programming, Cloud Computing, Concurrent and Distributed Systems, Databases
- 2017–2019 **A-Levels, Dulwich College, Dulwich Common, London**, *Maths (A*)*, *Further Maths (A*)*, *Physics (A*)*, *Computer Science (A*)*

Work experience

- May–Dec 2025 **Member of Technical Staff, Nutanix, Cambridge**
Worked on developing features of the Nutanix hypervisor AHV.
Designed and implemented the testing pipeline for emulated SR-IOV devices.
Contributed to the Linux kernel to fix a PCI subsystem sysfs misbehaviour.
- Oct 2023–May 2025 **Software engineer, XenServer, Cambridge**
Working on developing rich APIs for a full stack virtualisation platform.
Led features on improving and maintaining clustering stack and storage systems.
Delivered training & talks to peer colleagues on OCaml & clustering systems.
- July–Sep 2022 **Optimal Resource Scheduler, University of Cambridge, Systems Research Group**
Implemented a [distributed scheduler](#) with an asynchronous consensus algorithm for Kubernetes.
Schedulers reach consensus as they are deployed into a (simulated) cluster of up to 900 nodes.
Scheduling algorithm achieved 100% latency reduction compared to the default centralised Kubernetes scheduler.

Projects

- 2022–2023 **Eventual consistency in mnesia**
Extended an existing database engine [mnesia](#) with eventual consistency support.
Extension achieved about 10x performance compared to the original transactional mechanism.
Dissertation won departmental highly commended prize.
Delivered a talk at the [CodeBeam](#) conference and received over 90% positive feedback.
- Dec 2022 **Cryptocurrency price prediction app**
Built an online [ML model](#) in Python for cryptocurrency with the ARIMA time series model.
Set up the full stack with Apache Kafka for message queuing, Apache Flink for stream processing, and InfluxDB for results analysis and visualisation.
- 2021–2022 **Distributed Datalog engine**
Designed a distributed datalog (a database query language) [engine](#) in Erlang that computes datalog queries in a MapReduce fashion.
Awarded as a highly commendable dissertation (top three) by the University of Cambridge Computer Laboratory.

Skills

- Programming Rust, OCaml, Python, C, C++, Java, Go, Erlang, Shell, SQL, $\LaTeX$
- Frameworks Flink, Spark, MapReduce, Kubernetes, Mnesia, Android, TCP, Raft, AWS

Interests

- Music Play the Erhu — a Chinese musical instrument.
Member of the Cambridge University Chinese Orchestra Society.