

# Nicholas Yap

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## EDUCATION

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### Princeton University

M.S.E in Computer Science (*Fully-funded, research-based*)

Princeton, New Jersey

Sep 2025 – Expected May 2027

### Columbia University

B.A. in Computer Science and Mathematics. CGPA: 4.0/4.0

New York, New York

May 2025

**Technical Courses:** Computer Networks, Advanced Algorithms, Operating Systems, Intro to Computer Architecture, Competitive Programming, Machine Learning, Real Analysis, Probability Theory, Abstract Algebra, Data Structure, High Performance ML

**Awards:** Kleiner Perkins 2024 Engineering Fellowship, ICPC Greater New York Regionals 2023 (37/92), ICPC North American Qualifiers 2023 (6/109 within Columbia), 1<sup>st</sup> Place @ High Performance Computing Innovation Challenge (\$5000)

**Skills:** C, C++, Python, Node, Go, SQL, NoSQL, KVM/QEMU, Java, Git version control, CMake, TypeScript

## WORK EXPERIENCE

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### Infinitus Systems, AI Healthcare Startup

Member of Technical Team Intern (*Full Stack*), Kleiner Perkins Engineering Fellowship

San Francisco, California

June 2024 – Aug 2024

- Built end-to-end semantic search model for Standard Operating Procedures (SOP) using React (front-end), Go, Gemini, Python (back-end), improved document retrieval accuracy by 11% through iterative data labelling, and experimentation
- Automated internal SOP escalation workflow using Google Chat REST API, Python, automating ~1400 messages monthly; feature is live in production with 50-100 internal users. Used logging data to augment search model dataset.
- Designed Google Cloud Pub/Sub pipeline to ensure real-time synchronization between ingestion and retrieval layers
- Cross-functional collaboration with teams across design, product, ML, customer, and authored technical docs

### SGInnovate, Venture Capital Firm

Software Engineering Intern

Singapore

Dec 2021 – Feb 2022

- Implemented updates to 2 talent program forms (PX and Talent Marketplace) using VueJS, introduced resume auto filling feature using Sovren API and NodeJS, cut down application filling time by 85%. Assisted UAT for prod release

### Procare Solutions Pte Ltd., Healthcare Startup

Software Engineering Intern

Singapore

Mar 2021 - July 2021

- Developed NodeJS microservices for medication refill/partial order in HealthHub app, used in 23 polyclinics in Singapore and by thousands of patients daily. Implemented 2-way SSL for client security compliance

## TEACHING & RESEARCH EXPERIENCE

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### Rorke – Black-box Microsecond-scale VM Scheduling

New York, New York

Columbia Computer Science Department

- Integrated para-virtualized schedulers (UFO and CPS) as benchmarks against Rorke, using Python, Virsh, QEMU
- Designed Poisson-distributed database RocksDB workload in C++; Evaluating use of cache partitioning with Intel CAT

### Teaching Assistant for Operating Systems and Computer Networks

New York, New York

Columbia Computer Science Department

- Held office hours, graded assignments, covered topics including TCP, IP networking, CDNs; added section on implementing a global FIFO scheduler for OS homework 7

## PROJECTS

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### Linux Round-Robin Scheduler

- Developed a simple round-robin scheduler as default policy in Linux Kernel as part of OS group project. Supports SMP, idle load balancing

### High Performance Computing Innovation Challenge

- Developing walkability assessment software. Conducted data collection using sources such as Google Street View

### Column-store Prototype – C++, CMake, GTest

- Built column store abstractions with basic append and scan operations on slotted pages. Implemented buffer pool manager with LRU-K eviction and page-level I/O.