

JAM KABEER ALI KHAN

[GitHub](#) · [Personal Website](#)

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EDUCATION

University of Hong Kong

BEng Computer Science with minor in Mathematics

Major GPA: 3.61; CGPA: 3.50

Hong Kong SAR

Sept 2021 - June 2025

Northeastern University

Semester Exchange

GPA: 3.92

Boston, USA

Jan 2024 - May 2024

EXPERIENCE

Standard Chartered

Oct 2025 - onward

Incoming Quantitative Developer - *full-time*

Hong Kong SAR

Tech: **Haskell, Mu, C++**

- Develop and implement high-frequency trading strategies in Haskell; contribute to the in-house Mu compiler to enhance performance and language features.

Max Planck Institute for Security & Privacy

April - Oct 2025

Research Intern - *full-time*

Supervisor: [Gilles Barthe](#)

Bochum, Germany

Tech: **OCaml, Rocq, Haskell & Lean4**

- Implementation of a classic programming language using Haskell with a variable time quantum search algorithm, which is compiled to a quantum core language capable of circuit generation with guarantees on complexity.
- Implementation of a specification generation mechanism to Lean4 and Rocq for an interactive theorem prover based on Classical-Quantum program logic using OCaml.

HKU Programming Languages Group

July 2024 - April 2025

Undergraduate Thesis

Supervisor: [Bruno C. d. S. Oliveira](#)

Hong Kong SAR

Tech: **Haskell & Coq**

- Designed & implemented a programming language with *first-class* environments, capabilities & separate compilation with formalized type-directed elaboration to a core calculus λ_E in Rocq.

HKU Quantum Information and Computation Lab

June - Aug 2024

Research Intern - *full-time*

Supervisor: [Ravishankar Ramanathan](#)

Hong Kong SAR

Tech: **Python, Matlab, Julia & CVXPY**

- Device-independent QKD protocol based on simplex measurements, including the design of a Bell inequality with self-testing and guessing probability curves using convex optimization techniques.

All Round Education Academy

March - Nov 2023

Software Developer (Freelance) - *part-time*

Hong Kong SAR

Tech: **JavaScript, ReactJS, NextJS, Redux & TailwindCSS**

- Developed an Ed-tech revision web app deployed to **30+** users using Redux for caching and dynamic data storage.

ActusRayPartners Limited Hedge Fund

June - Aug 2023

Technology Intern - *full-time*

Hong Kong SAR

Tech: **Python, MSSql, PyUnit, VBA & Flask**

- Developed Database library and integrated VBA with Flask to enable real-time trade tech synchronization for traders.

HKU Sleep Lab

April - Oct 2022

Student Research Assistant - *part-time*

Supervisor: Shirley X. LI

Hong Kong SAR

Tech: **Java, Objective-C, Android Studio, XCode & XML**

- Optimized Android/iOS clients by implementing an 80% load-reducing cache via AndroidX migration and eliminating iOS race conditions with multi-threading.

SELECTED PROJECTS

EnvCap - Interpreter *Haskell*

[GitHub](#)

- Designed and implemented a programming language with access control using capabilities as first-class modules.

Distributed Consensus Protocol RAFT *Python, UDP Sockets*

[GitHub](#)


- Developed a distributed key-value store using the RAFT consensus algorithm.
- Ensured data consistency through leader election, log replication, and client request handling.

JCshell: Custom Shell Implementation *C*

[GitHub](#)

- Developed a custom command-line shell in C supporting command execution with piping.
- Parsing and validation of commands, and managed multiple processes using pipes for inter-process communication.

PUBLICATIONS & OTHERS

1. Jam Kabeer Ali Khan. “Capabilities as First-Class Modules with Separate Compilation.” In *Proceedings of the 46th ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI '25), Student Research Competition*. **1st Place Award**.  [Extended Abstract](#)

SKILLS

Programming Languages:	Python, Haskell, Gallina, Java, C/C++, Racket, JavaScript
Frameworks:	Flask, NextJS, ReactJS, ExpressJS, Flutter, Android Studio, TailwindCSS
Coursework:	Algorithms, Data Structures, Database, Networks, Functional Programming Programming Languages, Optimization Theory, Multi-variable Calculus, Number theory, etc

AWARDS AND HONORS

• HKU Undergraduate Entrance Scholarship for Outstanding Academic Talents	2022, 23, 24
• HKSAR Government Scholarship Fund	2021, 22, 23, 24
• UBS Hackathon: 3 rd runner-up	2024
• Rosita King Ho Scholarship	2024
• Cathay Hackathon: 2 nd runner-up - Won Free Ticket to Boston, USA	2023
• HKU Foundation Entrance Scholarship	2021-2022
• Top in Sindh and Balochistan, GCE A-levels Computer Science	2020
• Top in Sindh and Balochistan, GCE A-levels Physics	2020
• Best Across Three GCE A-levels, 2 nd place in Pakistan	2020
• 100% Merit Scholarship GCE A-levels, Nixor College	2018-2020

OTHER EXPERIENCE

Teaching Assistantships

1. COMP2396 Object-oriented Programming and Java	Sept - Dec 24
2. COMP2396 Object-oriented Programming and Java	Sept - Dec 23
3. ENGG1340 Computer Programming II in C++	Jan - May 22

Leadership Experience and Volunteering

1. New College Programming Society, Founder & President	Sep 23 - Dec 24
2. New College Outdoor Club, Founder & President	Sep 22 - Dec 23
3. New College Events, Culture & Festivals Club, President	Sep 23 - Dec 23