

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 <i>Sept 2021 - June 2025</i>
Northeastern University Semester Exchange GPA: 3.92	Boston, USA <i>Jan 2024 - May 2024</i>

EXPERIENCE

Standard Chartered		Oct 2025 - onward
<i>Incoming</i> Quantitative Developer - <i>full-time</i>		Hong Kong SAR
Tech: Haskell, Mu, C++		
<ul style="list-style-type: none"> • 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 - <i>full-time</i>	Supervisor: Gilles Barthe	Bochum, Germany
Tech: OCaml, Rocq, Haskell & Lean4		
<ul style="list-style-type: none"> • 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		
<ul style="list-style-type: none"> • Designed & implemented a programming language with <i>first-class</i> 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 - <i>full-time</i>	Supervisor: Ravishankar Ramanathan	Hong Kong SAR
Tech: Python, Matlab, Julia & CVXPY		
<ul style="list-style-type: none"> • 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) - <i>part-time</i>		Hong Kong SAR
Tech: JavaScript, ReactJS, NextJS, Redux & TailwindCSS		
<ul style="list-style-type: none"> • 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 - <i>full-time</i>		Hong Kong SAR
Tech: Python, MSSql, PyUnit, VBA & Flask		
<ul style="list-style-type: none"> • 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 - <i>part-time</i>	Supervisor: Shirley X. LI	Hong Kong SAR
Tech: Java, Objective-C, Android Studio, XCode & XML		
<ul style="list-style-type: none"> • 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:** 3rd runner-up 2024
- **Rosita King Ho Scholarship** 2024
- **Cathay Hackathon:** 2nd 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, 2nd 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