Li Ka Lok, Jack

https://kaloklijk.github.io

email: kaloklijk@gmail.com
phone number: + 852 5548 1377

Profile

Love maths & programming, appreciation of creative ideas. Discovered 2 new algorithms in University for computing modular inverses and solving logical sentences while attending the lectures.

Domain Knowledge: Algorithms' design & analysis, CI/CD architecture, web scrapping, data analysis, graph theory, networking, data structures, Machine Learning, Deep Neural Network model, web development, app development

Technical Skills: kdb+/q(functional/array programming), Jenkins(CICD), Git(SCM tools), python(data analysis&visualization, web/app development, Machine Learning, etc), sklearn, keras, tensorflow, pycaret, html/css/js, Vuejs, Docker, kubernetes, AWS, Apache Kafka, Apache Cassandra, Linux/Unix, SQL, Microsoft Office(Word, Excel, PowerPoint)

Working Experience

Software Engineer, FD Technologies plc. 07/2022 – Now

- Develop platforms for FX trading, provide UAT, smoke and regression test on Kx trading platforms for global top tier 1 banks
- 2 consecutive Months for winning FunQs kdb+ Competitions (in Asia) in Kx
- Have advanced training on q/kdb+ for modelling stock price by solving statistical differential equations, building Binomial Option Pricing Model, building advanced tickerplants
- q/kdb+, Jenkins, python, Linux/Unix, SQL, Jira, Git

STEM tutor, i-education 05/2017 - 07/2017

- Help organize and teach STEM courses in Primary School
  - Teach Primary School Students to build solar car
  - Teach Primary School Students about the concepts of solar cars
  - Help organizing other STEM events

Education

The Chinese University of Hong Kong
Bsc. In Mathematics & Information Engineering 09/2017 – 01/2022

- Relevant modules: data structures, Algebraic structures, Linear Algebra, Introduction to Software Engineering, Design & Analysis of Algorithms, Introduction to Cyber Security, Cryptography, Introduction to Internet of things, Introduction to C programming, Engineering Practicum, Information Infrastructure Design Lab, Engineering Project Design,

- Dissertation:

- *Suboptimality and Achievability of 3-letters superposition coding region in 3-receivers Broadcast erasure channel in network information theory settings*
  - In depth study of (network) Information theory
  - Use Python Symbolic Information Theoretic Inequality Prover(by Prof. Li(2019) in CUHK) to compute the following
  - Prove the achievability of 3-letters superposition coding scheme(a codebook of algorithms) in 3-receivers Broadcast erasure channel using Shannon's information inequalities by computing its rates region and show that it is no-where negatives, assuming that the letters spaces are linearly independent R-vector spaces(infinite keywords)
  - As one of the PhD in CUHK proves that superposition coding is not optimal in 3-receivers broadcast erasure channel, I compute the sub-optimality of superposition coding in higher letter case(3 letters)

Professional Accomplishment

Certified Associate in Python Programming

- Certified as an associate python programmer at Python Institute
- https://kaloklijk.github.io/assets/certificate_iTDE.eYnY.00Nt.pdf

Develop new algorithm for modular inverses

- created better algorithm in University for computing modular inverses

Participation in Hang Long Mathematics Awards

- discover new ways (similar to Morse theory) to compute homology theory of manifolds in High School
- write mathematical dissertation about the discovery

Additional Information

- Recreational secretary of the residential association of Bethlehem Hall in United College, CUHK
  - Help organize college level sports events including the Head's cup, Athletic Meet, swimming gala
  - Communicate with residents and persuade them to participate in different events
  - Help other members in residential association with their events
- Good knowledge in postgraduate/doctorial level maths and physics in specific fields(Symplectic geometry, algebraic geometry, almost complex geometry, Closed Gromov Witten theory, Lagrangian Floer theory, (topological) quantum field theories, general relativity, Classical Mechanics)
- Like singing
- Smart and creative
- Very good at designing algorithms
- Running a dashboard for FX prices
- More information on https://kaloklijk.github.io