

Sankalok Sen

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EDUCATION

The University of Hong Kong, Hong Kong

Sep 2019 - Jun 2023

BEng in Computer Science, Minor in Statistics

Scholarships and Awards: HKU Foundation Scholarship, HKU Dean's Fund, HKU-CS Research Scholarship, MITACS Globalink Research Scholarship

Teaching Assistant: COMP1117 & ENGG1330 – Introductory Python Programming, 2020-21

Coursework: Natural Language Processing, Probability & Statistical Inference, Regression Analysis, Algorithms, Machine Learning, Database Systems, Data Mining

WORK EXPERIENCE

Research Engineer | *Theory Lab, Hong Kong Research Centre, Huawei, Hong Kong*

Feb 2024 – Present

Research Assistant | *The University of Hong Kong, Hong Kong*

Oct 2023 – Present

Researching on a unified data structure to feed data for LLMs to handle multi-task problems. Supervised by Q. Liu.

Junior Research Scientist | *B. Y. Quantitative Medicine, Hong Kong*

Feb 2023 - Feb 2024

Merging cross-platform cancer datasets using nonparametric statistics to increase data compatibility. De-noising high dimensional data (~17-34K gene probes) using batch correction to aid intra-platform merging. Implementing deep learning and boosting models for cancer resistancy prediction and gene network analysis. Supervised by B. Yung.

Research Assistant | *The University of Hong Kong, Hong Kong*

Jul 2022 – May 2023

Implemented, benchmarked and evaluated the performance of classical algorithms on legal data mining techniques. Built (1) Knowledge Graphs, (2) Keyword Extraction and Summarization, and (3) Semantic Analysis, in order to automate information extraction from Hong Kong judgments. Supervised by L. Kong.

AI-Finance Research Intern | *LORA Technologies, Hong Kong*

Jun 2022 – Jul 2022

Designed and created a stochastic algorithm for scouting news sources based on Markov Chain transition theory, improving over 50% of the base model, as well as reducing CPU usage by over 75%. Created a hotness indicator of equities and indexes using news data from the in-house proprietary scrapers.

Research Assistant | *Saint Mary's University, Halifax, Canada*

Jun 2021 – Sep 2021

Studied Fortune 500 CSRs using NLP parsers and implemented and evaluated keyword assisted Topic Models. Results showed a significant improvement in Diversity, Equity and Inclusion (DE&I) related keywords usage and topic distributions in late 2010s, compared to 1990s-2010s w.r.t. Corporate Social Responsibility. Supervised by M. Drira.

PUBLICATIONS

1. *Exploring the Effects of Data Augmentation for Drivable Area Segmentation*, Bhuiya et al. (ICUS 2021)

PROJECTS

1. Network Benchmarking (2023)

Implemented *netbench*, which measured the network performance between two stations, invoked from CLI. Measured TCP transfer throughput between the server-client pairs in sending (1) varying volumetric and (2) ping-pong style small packet data respectively.

2. GPU Sort in C (2022)

Parallelized the GPU Sorting Algorithm using multi-threading, mutex locks and semaphores. Optimized and reduced runtime from 70 to 8 seconds for sorting 10 billion numbers.

3. Shell in C (2022)

Programmed a C-based Shell that can locate and execute any valid program with absolute, relative or \$PATH env. Added self-built termination and timeX commands for prints out process statistics and support for the pipe operator, SIGINT and SIGKILL.

4. HKU Exchange Program Assignment using 0-1 Integer Programming in Python (2021)

Programmed a model for assigning spots for HKU Exchange Programme using 0-1 Programming. Bootstrapped samples using HKU Graduation Records, and created a Greedy Algorithmic strategy with results showing that for up to 500 applications per faculty, the model resulted in an assignment within 10 seconds.

SKILLS

Programming Languages: Python, R, Java, C, C++, SQL, Linux, Git

Hobbies: Chess (Bullet: 98.5th percentile on Chess.com, Blitz: 94th percentile on Chess.com)