

MARK TAYLOR

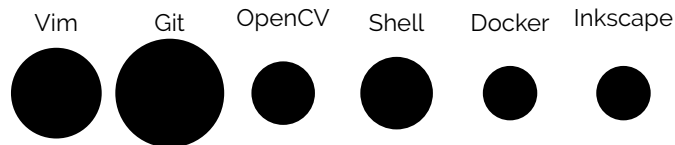
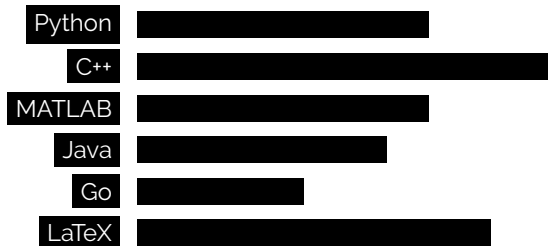
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WHO AM I?

Mark Taylor is a nerd (but with humor :) who is very into computer science and mathematics. In particular, he is strongly interested in search engines, compilers, operating systems, machine learning/deep learning, computer vision, Fourier/Laplace transforms, programming languages, algorithms & data structures, etc. He loves FLOSS (also flosses daily :), enjoys delivering high-quality content. Besides, he is an excellent communicator, listener, and a man with an entrepreneurial spirit.



PROJECTS

2019 -

Data Structures & Algorithms

A collection of data structures & algorithms, implemented using C++ templates. Implemented containers include C++17-compliant (`[unordered_]map/set`) AVL tree & red-black tree ordered symbol tables, hash tables; Tries, TSTs; probabilistic data structures skip lists & bloom filters; etc. Implemented algorithms include major sorting algorithms (STL-like (binary) insertion sort, merge sort, heapsort, quicksorts (Hoare, Lomuto, quick3way, fast3way), MSD/LSD radix sorts, `str_qsort`, `quickselect` etc.); major string-searching algorithms (BF, BM, KMP, FA, etc.); graph algorithms (BFS, DFS, Dijkstra's algorithm, Prim's algorithm, Kruskal's algorithm, etc.). And lots of useful applications: calculators, LRU cache/page replacement, `gwnre` (Grep With No Regular Expressions), LCS search (IDE autocomplete), LCS diff, tree command, Huffman zip, etc.

Planning: Hybrid TSTs, full-text search (in blog, bloom filters), cuckoo filters, Aho-Corasick Automata (multiple-pattern matching, grep pipe, word filters), fuzzy search (Damerau-Levenshtein distance, bitap algorithm, (bloom filter/TST) spellcheckers), regular expressions (grep), burstsort, suffix tree (Ukkonen's algorithm), suffix array, B/B+ trees, LZW compression, Gaussian blur, etc.

2019 - 2021

Numerical Analysis

The study of algorithms that use numerical approximation for the problems of mathematical analysis. It includes matrix analysis, direct methods, iterative methods, eigenvalue problems, nonlinear systems, interpolation, approximation, integration, IVPforODEs, BVPforODEs, FEM2d, and my senior thesis (beautifully typeset :).

2022 -

msh

My (Minimum) UNIX SHell. Features include redirections, pipelines, signals, job control, etc.

EDUCATION

2017 - 2021

Bachelor's Degree (BSc)

Graduated in Information and Computing Science, Mathematics Department at Jilin University.

AWARDS

Meritorious Award in 2020 MCM

LANGUAGES

Chinese - native
English - proficient

HOBBIES

cycling, my favorite
swimming, newbie, but love it
movies, most of free time spent on