# MARK TAYLOR

## Software Engineer

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github.com/How-u-doing
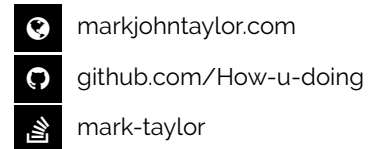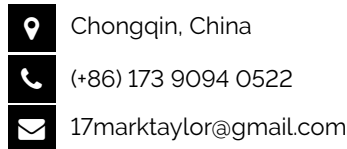
mark-taylor

## 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.

Python
C++
MATLAB
Java
Go
LaTeX

Vim   Git   Office   Docker   Inkscape
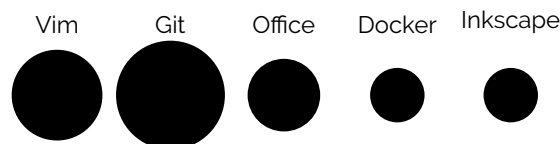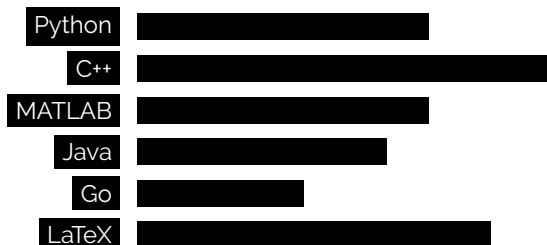
## PROJECTS

**2019 –**  **Data Structures & Algorithms**
A collection of data structures & algorithms, implemented using C++ templates. Implemented containers include C++17-compliant (`[unordered_][multi]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 redirection, pipeline, signal, background jobs, 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