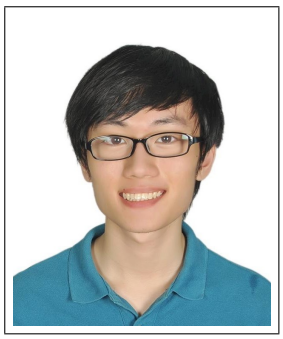

Trương Hoàng Long – CV

Address	Am Wasser 6 8600 Dübendorf, CH	**Mobile**	(+41) 76 721 51 26
		Email	long.truong@inf.ethz.ch
Birthyear	2000	**Homepage**	konaeakira.github.io
Nationality	Vietnamese		

Ausländerausweis B (employer needs to apply for work permit)

Interests

Algorithms & Data structures, Functional programming, High-performance computing, Micro-controllers, Linux, Machine learning.

Education

2019-now BSc Computer Science - ETH Zürich

2016-2019 Computer Science Honors - VNU.HCM High School for the Gifted

Employment History

Sep 2020 - Jan 2021 ETH Zürich
Teaching Assisstant

I was teaching assisstant for Algorithms Lab, a Master's level course on solving algorithmic problems using network flow, computational geometry (in particular Delaunay triangulations), and linear programming.

Technologies: CGAL (Computational Geometry Algorithms Library), BGL (Boost)

Technical Skills

C & C++ — *CGAL, Boost, Eigen*
Linux, Bash, Git
Javascript — *Node.js*
Python 3 — *Pandas, Numpy, Tensorflow*

Languages

Vietnamese — Native
English — Bilingual-fluency (108/120 TOEFL iBT)
German — Bilingual-fluency (80/100 Goethe Zertifikat C1, Prädikat "gut")

Awards and Honors

2021 Silver Medal, ICPC Southwestern European Regional Contest
2019 Silver Medal, Vietnamese National Olympiad in Informatics
2018 Silver Medal, ICPC Vietnamese National Contest
2018 Silver Medal, Vietnamese National Olympiad in Informatics

Projects

- **Procedural Terrain Generation via Hydraulic Erosion Simulation**

  A highly paralellizable program that simulates the effects of hydraulic erosion on a randomly sampled heightmap to produce realistic terrain.

  Technologies: C++ (Qt5)
  https://github.com/KonaeAkira/erosion-sim

- **Gomoku**

  Server and client for the classical game of gomoku (connect 5, tic-tac-toe). Written in Javascript. The server runs on Node.js and the server and client communicate over websockets.

  Technologies: Javascript, Node.js (express, websocket)
  https://github.com/KonaeAkira/gomoku

- **Minesweeper X**

  A bot based on image recognition that can play Microsoft's Minesweeper X on Windows 10.

  Technologies: C++
  https://github.com/kuroni/minesweeper-bot

- **IoT - Smart Greenhouse**

  A greenhouse that can be monitored and controlled remotely. Built based around the Intel Galileo single-board microcomputer and the NodeMCU single-board microcontroller.

  Technologies: Arduino, Intel Galileo, NodeMCU, Raspberry Pi

Research

- **Using the Shortest Path Faster Algorithm to find a negative cycle**

  I propose a modification to the Shortest Path Faster Algorithm (SPFA) to efficiently detect negative cycles in weighted directed graphs.

  https://konaeakira.github.io/posts/using-the-shortest-path-faster-algorithm-to-find-negative-cycles.html

- **Segmented SPFA: An improvement to the Shortest Path Faster Algorithm**

  I propose a way to improve the constant-factor in the runtime of the Shortest Path Faster Algorithm (SPFA) on weighted directed graphs with a large amount of strongly connected components.

  https://konaeakira.github.io/posts/segmented-spfa-an-improvement-to-the-shortest-path-faster-algorithm.html