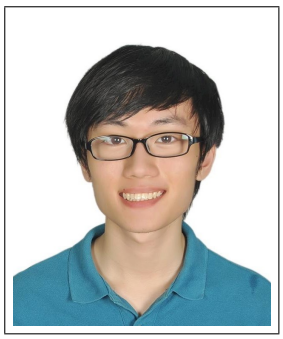

Trương Hoàng Long – CV

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Birthyear 2000
Nationality Vietnamese

Ausländerausweis B

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Email long.truong@inf.ethz.ch
Homepage konaeakira.github.io

Interests

Algorithms & Data structures, Functional programming, Blockchain, 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*
Java
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

- **SBB Bike Reservation Planner**

  Developed during 2022's "START Hack" Hackathon. Solves the problem of predicting bike crowdedness for future trains using machine learning.
  https://github.com/samuelbohl/START_HACK_2022_SBB

- **Skyblocker**

  A Minecraft fabric mod bringing QoL changes (better GUI, ingame API querying, etc.) to Hypixel Skyblock.

  Technologies: Java
  https://github.com/LifeIsAParadox/Skyblocker

- **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

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