Haoliang Chen

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Education

- **University of California, Riverside** — Riverside, CA
  M.S. Computer Science (GPA: 3.9/4.0) — *Sep. 2016 - Mar. 2018*
  - Relevant courses: Design & Analysis of Algorithms, Advance Computer Architecture, High Performance Computing, Compiler Construction, Network Routing

- **Sun Yat-Sen University** — Guangzhou, China
  B.E. Network Engineering — *2012-2016*
  - Admitted to because I won the first prize in the provincial programming contest (NOIP2011)
  - Relevant courses: Data Structure and Programming, Algorithm Design and Analysis, Computer Architecture, Principles and Practice of Database Systems

Work Experience

- **SoundHound Inc.** — Santa Clara, CA
  Software Engineer — *June 27th 2018 - Present*
  - Implemented a data processing and conditioning algorithm in Python that fetch data from a in house database and produces tables of necessary elements for responding music related queries.
  - Implemented a sub-component in C++ that can understand and give response to music related questions sent from users via phones or via APIs in real time, which demands and advances understanding of Algorithms, Computer Architecture, and High Performance Computing
  - Improving aforementioned algorithm and component, also focusing on other language understanding domains.

- **University of California, Riverside** — Riverside, CA
  Teaching Assistant — *Sept. 2017 - Dec. 2017*
  - Hosted lab sections of CS122a Intermediate Embedded and Real-Time Systems

- **Gosuncn Technology Group Co., Ltd.,** — Guangzhou, China
  Software Engineer — *July 2015 - Sept. 2015*
  - Led deploy and test Qpid Message Queue system for our new distributed system, the home security cloud, documented the best practices for internal reference.
  - Developed a looking glass debug tool in C++ that monitors traffic between Qpid servers.
  - Developed a multi-threaded DDoS system in C++ for stress-testing companys new network library.
  - Designed some scheduling algorithms.

School Projects

- **CGI Fluid Simulation** — Riverside, CA
  CS 230 Computer Graphics — *Winter 2017*
  - Used Eigen API to solve passion equations, implemented a 2D Eulerian liquid simulation,

- Developed a demo software in C++ and OpenGL to showcase the simulation results.

- **Deliver Performance ANN to Edge Devices via Offloading**   Riverside, CA
  Guided by Prof. Jiasi Chen   *Spring 2017 - Fall 2017*
    - Designed a dynamic offloading scheme that make possible for low-power edge devices to enjoy the performance of complex artificial neural networks (ANN).
    - Designed a networking algorithm that improves the coverage of server-aid ANN and optimizes the connectivity, it reduce the latency and increase the throughput of our service.
    - Conducted extensive measurement of latency, data usage, hit-rate, and system load.

- **Adopt Software-Defined Network to Vehicular Ad Hoc Network**   Guangzhou, China
  Guided by Prof. Weigang Wu   *2015 - 2016*
    - Designed a new routing protocol with a software defined network alike architecture for vehicular networks, which outperforms tridictional Ad Hoc protocols in terms of effective bandwidth, latency and packet loss.
    - Changed the source code of NS-3 (a open source network simulator) significantly to simulate our novel protocol (C++/STL)
    - Led conduct extensive simulations using NS-3/SUMO (a vehicle traffic simulator) toolkit (C++/STL/Boost)

- **Other Projects**   Planet Earth
  UCR, SYSU and at home   *2012-2018*
    - Designed and crafted a small GPS logger with Arduino.
    - Use Word2Vec and Scrapy to dig up sub-culture synonyms from bilibili.com

Skills

Languages: C/C++ (STL), Python, Bash, LaTeX

Strength: Excellent at algorithms and architectures, very productive with C++(STL) and Python, experience with Linux/Git, comfortable working with huge codebase