

HAOWEN ZHANG

Georgia Institute of Technology \diamond Atlanta, GA 30332, United States
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EDUCATION

Georgia Institute of Technology 08/2017 - Present
Ph.D. student in Computational Science and Engineering

Shandong University 09/2013 - 06/2017
B.E., Hons, in Computer Science and Technology

RESEARCH EXPERIENCE

Georgia Institute of Technology Atlanta, GA
Graduate Research Assistant; Advisor: Dr. Srinivas Aluru 08/2017 - Present

- Working on long/short read algorithm design and implementation.
- Using high-performance architectures to accelerate sequencing data analysis.

Tsinghua University & National Institutes for Food and Drug Control Beijing, China
Visiting Student; Advisor: Dr. Tao Jiang and Dr. Tai Guo 01/2017 - 07/2017

- Worked on viral deep sequencing data analysis.
- Set up a pipeline to detect low-frequency variants using deep sequencing data of viruses.

Shandong University Jinan, China
Research Assistant; Advisor: Dr. Weiguo Liu 08/2015 - 01/2017

- Proposed a new index data structure and two novel seeding algorithms for short read mapping.
- Accelerated edit distance computing on Intel Many Integrated Core Architecture (MIC).

The University of Hong Kong Hong Kong
Research Intern; Advisor: Dr. Siu-Ming Yiu 08/2016

- 1/19 students accepted by HKU CS Research Internship Programme.
- Conducted a comprehensive evaluation of structural variation (SV) detection tools using simulated reads.
- Gave suggestions on developing a new SV calling algorithm.

SKILLS

- Programming: C/C++, Shell, Java, Python, L^AT_EX
- Parallel computing: OpenMP, MPI, code vectorization

PREPRINTS

1. **Haowen Zhang**, Chirag Jain, and Srinivas Aluru. A comprehensive evaluation of long read error correction methods. *bioRxiv*, 2019. (submitted)

PUBLICATIONS

1. Chirag Jain[†], **Haowen Zhang**[†], Yu Gao, and Srinivas Aluru. On the complexity of sequence to graph alignment. In *International Conference on Research in Computational Molecular Biology (RECOMB)*. Springer, 2019. ([†]contributed equally; accepted)
2. Chirag Jain, Sanchit Misra, **Haowen Zhang**, Alexander Diltthey, and Srinivas Aluru. Accelerating sequence alignment to graphs. In *Parallel and Distributed Processing Symposium (IPDPS), 2019 IEEE International*. IEEE, 2019. (accepted)
3. Yueyue Liu, Tai Guo, Qingchuan Yu, **Haowen Zhang**, Jialiang Du, Yunqi Zhang, Shengli Xia, Huan Yang, and Qihan Li. Association of human leukocyte antigen alleles and supertypes with immunogenicity of oral rotavirus vaccine given to infants in china. *Medicine*, 97(40):e12706, 2018
4. **Haowen Zhang**[†], Yuandong Chan[†], Kaichao Fan, Bertil Schmidt, and Weiguo Liu. Fast and efficient short read mapping based on a succinct hash index. *BMC bioinformatics*, 19(1):92, 2018. ([†]contributed equally)

SELECTED HONORS AND AWARDS

- Workshop on String Algorithms in Bioinformatics (StringBio) Travel Award 2018
- Workshop on the Future of Algorithms in Biology (FAB) Travel Fellowship 2018

TALKS

- On the complexity of sequence to graph alignment, HotCSE, Gatech 03/2019

SERVICE

- External reviewer: IPDPS 2018
- Journal reviewer: Nucleic Acids Research