Omar Ahmed

Ph.D. Student
Department of Computer Science
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Education

- **Johns Hopkins University** 2020 - present
  Doctor of Philosophy (Ph.D.) in Computer Science
  Advisor: Ben Langmead

- **Lehigh University** 2019 - 2020
  Master of Science (M.S.) in Computer Science
  Advisor: Brian Chen

- **Lehigh University** 2015 - 2019
  Bachelor of Arts (B.A) in Computer Science and Physics

Coursework includes: Machine Learning, Reinforcement Learning, Operating Systems, Database Systems, Computer Architecture, Randomized Algorithms, Network Security, Computational Genomics, Sketching for Sequences, Genetics, Chemistry, Biochemistry

Research Interests

- Computational Genomics, Pangenomics, Sequencing Analysis, Parallel Computing, Sketching, Functional Genomics, Disease Genomics

Peer-Reviewed Journal Papers

[1] Christopher Wilks, **Omar Ahmed**, Daniel N Baker, David Zhang, Leonardo Collado-Torres, Ben Langmead. Megadepth: efficient coverage quantification for BigWigs and BAMs. *Bioinformatics*, 2021

[2] **Omar Ahmed**, Massimiliano Rossi, Sam Kovaka, Michael C. Schatz, Travis Gagie, Christina Boucher, Ben Langmead. Pan-genomic Matching Statistics for Targeted Nanopore Sequencing. iScience, 2021

Conference Talks

- Pan-genomic Matching Statistics for Targeted Nanopore Sequencing, RECOMB-seq (2021)

Experimental Background

- **Developmental Biology Lab, Lehigh University**
  - Performed experiments under supervision of Dr. Michael Layden
  - Focused on characterizing the role of Delta-Notch Signaling in the sea anemone, *Nematostella vectensis*
  - Experimental techniques used included qPCR, in-situ hybridizations, DNA and RNA Isolation, PCR, bacterial cloning, micro-injection, gel isolation, and bacterial culturing
  - August 2016 to March 2020

- **Biosystems Dynamics Summer Institute, Lehigh University**
  - Performed experiments under supervision of Dr. Aurelia Honerkamp-Smith
  - Worked on developing a procedure for producing a tethered lipid bilayer on a glass slide
  - Experimental techniques used such as florescent microscopy, FRAP, and flow imaging microscopy
  - May 2017 to July 2017

Mentoring

- **TRAC Writing Fellow – Lehigh University**
  - Worked with students in an assigned section to improve their writing and multimedia assignments in a wide array of courses
  - August 2016 to May 2019

- **Peer Leader for Organic Chemistry – Lehigh University**
  - Assisted students in an assigned group with their organic chemistry work during recitation each week
  - August 2017 to May 2018

Community Service

- **Volunteer at Lehigh Valley Hospital**
  - Worked with pharmacists at the hospital to deliver medicine, as well as helping families entering the emergency room to find their loved ones
  - Volunteered each week for three summers