

# Omar Ahmed

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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)
- ▶ *Pan-genomic Indexes for Robust Classification of Nanopore and Metagenomic Reads*, Genome Informatics (2021)

## Fellowships

- ▶ **NIH T32 Training Grant – Computational Medicine**
  - Reviewed and discussed some of the latest current research and techniques in the emerging field of Computational Medicine
  - August 2021 to present

## 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