

# Muhammad Ali

+1 (781) 626 0891

mali@ccs.neu.edu  
<http://ccs.neu.edu/~mali>

## Education

Sep 2018 – Present	<b>Ph.D. in Computer Science</b> <b>Northeastern University</b> Grade: 3.75/4.0 Co-advised by Alan Mislove and Christo Wilson
Aug 2018	<b>M.S. in Computer Science</b> <b>Saarland University</b> Grade: 1.5/5.0 (A-) Thesis: <i>Measuring Bias in Facebook's Ad-Targeting Attributes</i> . Supervised by Krishna Gummadi.
May 2015	<b>B.S. in Computer Science</b> <b>National University of Computer &amp; Emerging Sciences (NUCES), Lahore</b> GPA: 3.46/4.0 (95th percentile) Thesis: <i>Politeness Classification in Online Community Requests using Recursive Neural Networks</i> . Supervised by Mehreen Saeed.

## Work Experience

Sep 2018 – Present	<b>Graduate Research Assistant</b> <b>Khoury College of Computer Sciences, Northeastern University</b> Boston, Massachusetts, USA Advised by Alan Mislove and Christo Wilson. Projects in algorithmic auditing and measurement of machine learning systems.
Jun 2017 – Aug 2018	<b>Student Research Assistant</b> <b>Max Planck Institute for Software Systems</b> Saarbrücken, Germany Part of Krishna Gummadi's Networked Systems group. Master's thesis work and projects related to bias and discrimination in Facebook advertising. Published work at FAT* 2018 and FATREC 2017.
Aug 2015 – Mar 2016	<b>Backend Engineer</b> <b>Patari Music</b> Lahore, Pakistan Built the foundation for the music platform's social features; maintained and added new features to the backend API.

## Publications

- 2019 | **Muhammad Ali\***, Piotr Sapiezynski\*, Miranda Bogen, Aleksandra Korolova, Alan Mislove, and Aaron Rieke. Discrimination through optimization: How Facebook's ad delivery can lead to skewed outcomes, April 2019. <https://arxiv.org/abs/1904.02095>
- 2018 | Till Speicher, **Muhammad Ali**, Giridhari Venkatadri, Filipe Ribeiro, George Arvanitakis, Fabrício Benevenuto, Krishna P. Gummadi, Patrick Loiseau, and Alan Mislove. Potential for discrimination in online targeted advertising. In *Proceedings of the Conference on Fairness, Accountability, and Transparency (FAT\*)*, 2018
- 2017 | Abhijnan Chakraborty, **Muhammad Ali**, Saptarshi Ghosh, Niloy Ganguly, and Krishna P. Gummadi. On quantifying knowledge segregation in society. In *Proceedings of the FATREC Workshop on Responsible Recommendation*, 2017

## Skills

**Technical:** Python, JavaScript, R, C, C++, Go, Java, MATLAB, Node.js, MongoDB, SQL, PHP, Unix, L<sup>A</sup>T<sub>E</sub>X

**Research:** Data mining and analysis, natural language processing, machine learning, deep learning, social networks, measurement studies

## Teaching

- Fall 2015 | **Teaching Assistant, NUCES**  
Introduction to Computing (CS101).
- Summer 2012 | **Curriculum Development Intern, CARE Foundation Pakistan**  
Volunteered with the NGO to develop teaching techniques for low-resource public schools. Wrote several lecture plans for primary school mathematics and English.