


# Vikrant Singhal

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CONTACT INFORMATION	e-mail: singhal.vi@husky.neu.edu	
EDUCATION	<b>Northeastern University</b> Boston, MA 02115 <i>Doctor of Philosophy, Master of Science in Computer Science</i> <ul style="list-style-type: none"><li>• GPA: 3.92/4.00</li><li>• Advisor: Prof. Jonathan Ullman</li></ul>	 <b>Fall 2016 – Present</b>
	<b>University of Southern California</b> Los Angeles, CA 90089 <i>Bachelor of Science in Computer Science (Mathematics Minor)</i> <ul style="list-style-type: none"><li>• GPA: 3.57/4.00</li></ul>	 <b>Fall 2013 – Spring 2016</b>
	<b>University of Arizona</b> (Transferred Out) Tucson, AZ 85721 <i>Bachelor of Science in Computer Science and Mathematics</i> <ul style="list-style-type: none"><li>• GPA: 4.0/4.0</li></ul>	 <b>Fall 2012 – Spring 2013</b>
PROFESSIONAL EXPERIENCE	<b>Northeastern University</b> <i>Graduate Research Assistant</i>	<b>September 2016 – Present</b>
	<b>University of Waterloo</b> <i>Visiting Graduate Student</i> Supervisor: Prof. Gautam Kamath	<b>September 2019 – December 2019</b>
	<b>Simons Institute for the Theory of Computing</b> <i>Visiting Graduate Student</i> Program: Data Privacy: Foundations and Applications	<b>January 2019 – May 2019</b>
	<b>USC, Computer Science Theory Group</b> <i>Undergraduate Student Researcher</i> Advisor: Prof. David Kempe	<b>May 2015 – May 2016</b>
	<b>Verselytic</b> <i>Front-End Developer (Intern)</i>	<b>May 2014 – August 2014</b>
	<b>University Advancement, University of Southern California</b> <i>Data Analyst (Student Worker)</i>	<b>July 2014 – August 2014</b>
RESEARCH PUBLICATIONS	<b>Differentially Private Algorithms for Learning Mixtures of Separated Gaussians.</b> Gautam Kamath, Or Sheffet, Vikrant Singhal, Jonathan Ullman. <i>In Proceedings of NeurIPS 2019, Vancouver, Canada.</i>	
	<b>Privately Learning High-Dimensional Distributions.</b> Gautam Kamath, Jerry Li, Vikrant Singhal, Jonathan Ullman. <i>In Proceedings of COLT 2019, Phoenix, AZ.</i>	
	<b>Deterministic and Probabilistic Binary Search in Graphs.</b> Ehsan Emamjomeh-Zadeh, David Kempe, Vikrant Singhal. <i>In Proceedings of STOC 2016, Cambridge, MA.</i>	
TEACHING EXPERIENCE	<b>Khoury College of Computer and Information Sciences, Northeastern University</b> <i>Teaching Assistant: Algorithms and Data (CS 4800)</i> Instructor: Prof. Jonathan Ullman	<b>Spring 2018</b>
	<b>Khoury College of Computer and Information Sciences, Northeastern University</b> <i>Teaching Assistant: Theory of Computation (CS 3800)</i> Instructor: Prof. William Clinger	<b>Fall 2017</b>
	<b>Khoury College of Computer and Information Sciences, Northeastern University</b> <i>Teaching Assistant: Discrete and Data Structures (CS 5002)</i> Instructor: Prof. Walter Schnyder	<b>Fall 2017</b>
	<b>Department of Mathematics, University of Arizona</b> <i>Undergraduate Teaching Assistant: First Semester Calculus (MATH 122B)</i> Instructor: Prof. Mariamma Varghese	<b>Spring 2013</b>
	<b>Department of Mathematics, University of Arizona</b> <i>Undergraduate Teaching Assistant: Functions for Calculus (MATH 122A)</i> Instructor: Prof. Mariamma Varghese	<b>Spring 2013</b>

UNDERGRADUATE RESEARCH PROJECTS	<p><b>Multiple Query Search on Graphs</b> Efficient graph search via rounds of multiple deterministic queries.  <i>Advisor:</i> Prof. David Kempe, University of Southern California. <b>August 2015 – November 2015</b></p> <p><b>Noisy Binary Search on Graphs</b> Efficient vertex search in graphs using noisy (uncertain) queries.  <i>Advisor:</i> Prof. David Kempe, University of Southern California. <b>May 2015 – August 2015</b></p> <p><b>Graph Theory</b> Determining degrees of regularity for which k-regular graphs have cordial labeling.  <i>Advisor:</i> Prof. Amitabha Tripathi, Indian Institute of Technology, Delhi. <b>July 2014 – April 2015</b></p>
FUN COURSES	<p><b>Completed:</b> Differential Privacy, Cryptography, Advanced Algorithms, Theory of Computation, Randomized Algorithms, Number Theory, Abstract Algebra, Mathematical Analysis, Topology, Probability Theory, Numerical Methods, Operating Systems, Artificial Intelligence, Computer Graphics, Intensive Principles of Programming Languages</p>
SELECT COURSE PROJECTS	<p><b>Differential Privacy</b> Designed a differentially private algorithm that answered independent, low-variance, linear queries more accurately than the Laplace Mechanism under a certain parameter regime. Proved a lower bound for the same problem.  <i>Rigorous Approaches to Data Privacy (CS 7880), Spring 2017</i></p> <p><b>Lexical Analyzer and Parser</b> Implemented a parser using ANTLR and Python for a language specified by the instructor (Quirk24).  <i>Intensive Principles of Programming Languages (CS 7400), Fall 2018</i></p> <p><b>Spam Filter</b> Implemented a naive Bayesian classifier for email spam filtering using Bag-of-Words representation.  <i>Introduction to Artificial Intelligence (CSCI 360), Spring 2015</i></p>
SKILLS	<p>Java, C++, Python, MATLAB, SQL</p>
HONORS AND SCHOLARSHIPS	<p>Graduate Fellowship at Northeastern University <b>Fall 2016 – Spring 2017</b></p> <p>Graduated Cum Laude from Viterbi School of Engineering, USC <b>May 2016</b></p> <p>Dean's List at Viterbi School of Engineering, USC <b>Fall 2013 – Fall 2015</b></p> <p>Academic Year Highest Academic Distinction, and Dean's List with Distinction at the University of Arizona <b>Fall 2012 – Spring 2013</b></p> <p>International Tuition Award at the University of Arizona <b>Fall 2012 – Spring 2013</b></p> <p>Honors College Tuition Award at the University of Arizona <b>Fall 2012 – Spring 2013</b></p> <p>Ranked 1571 nationally, among 512,000 candidates in IIT-JEE <b>2012</b></p>
HOBBIES	<p>Working on cars, simulation racing, watching anime, violin, piano, listening to music, reading</p>