Shilpa Nadimpalli

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Education

Princeton University, School of Engineering • Princeton, NJ
06/2013 – Present Ph.D. in Computer Science
09/2011 – 06/2013 M.A. in Computer Science
Advisor: Mona Singh

08/2007 – 05/2011 **Tufts University,** School of Arts & Sciences • Medford, MA
B.S. in Biology & Computer Science, *summa cum laude*
Senior Thesis, Awarded Highest Honors: "Formatt: Correcting Protein Multiple Structural Alignments by Sequence Peeking"

Awards, Honors, & Fellowships

09/2015 Siebel Scholar, Class of 2016 awarded annually for academic excellence and demonstrated leadership to 93 top students from the world's leading graduate schools
09/2011 – Present NSF's Graduate Research Fellowship for graduate study in STEM disciplines
09/2011 – Present Princeton's Gordon Wu Fellowship for engineering graduate study
08/2010 – 05/2011 Google's Anita Borg Memorial Scholarship for women in computer science
08/2007 – 05/2011 Tufts' Neubauer Scholarship for aptitude in research (1 in 10 of ~1350)
05/2011 Tufts' James Schmolze Award for excellence in computer science (1 of 42)
04/2011 Tufts' Class of 1882 Prize Scholarship for intellectual leadership (1 in 4 of ~5000)
04/2010 Tufts' Audrey Butvay Gruss Award for scientific achievement (1 in 4 of ~5000)
06/2009 – 10/2009 CRA-W/CDC's Distributed Research Experiences for Undergrads Fellowship
09/2008 – 05/2009 CRA-W's Multidisciplinary Research Opportunities for Women Fellowship
06/2008 – 09/2008 NSF/NIH's Southern California Bioinformatics Summer Institute Fellowship

Peer-Reviewed Publications

2015 **S Nadimpalli**, AV Periskov, M Singh. (2015). "Pervasive variation of transcription factor orthologs contributes to regulatory network divergence." *PLoS Genetics*. 11(3): e1005011.

2012 N Daniels, **S Nadimpalli**, L Cowen. (2012). "Formatt: Correcting Protein Structural Alignments by Incorporating Sequence Alignment." *BMC Bioinformatics*. 13(1): 259-266.

2011 **S Nadimpalli**, N Daniels, L Cowen. (2011). "Formatt: Correcting Protein Structural Alignments by Sequence Peeking." *Proceedings of the 2011 ACM Conference on Bioinformatics, Computational Biology, and Biomedicine*. 2: 315-319.

2009 J Rieffel, F Saunders, **S Nadimpalli**, H Zhou, S Hassoun, J Rife, B Trimmer. (2009). "Evolving Soft Robotic Locomotion in PhysX." *Proceedings of the 2009 ACM Conference on Genetic and Evolutionary Computation (GECCO '09)*. 11: 2499-2504.

Research & Work Experience

03/2012 – Present **Princeton University,** Dept. of Computer Science • Princeton, NJ
Investigating the evolution, natural variance, and mutations in cancer of gene regulatory networks through analysis of transcription factors under Prof. Mona Singh

01/2010 – 05/2011 **Tufts University,** Dept. of Computer Science • Medford, MA
"Formatt: Correcting Protein Multiple Structural Alignments by Sequence Peeking"
Improved the Matt protein structural aligner by incorporating a sequence alignment correction step and validating using objective measures under Prof. Lenore Cowen.

06/2009 – 10/2009 **Virginia Tech,** Dept. of Computer Science • Blacksburg, VA
"Cataloging Animal Retrocopies for Retrotransposition Model"
Developed a genome annotation independent algorithm to identify and classify retrocopies and chimeric genes in animal genomes given a transcriptome as input under Prof. Liqing Zhang.

09/2008 – 05/2009 **Tufts University,** Depts. of Comp. Sci., Biology, & Biomedical Eng. • Medford, MA
"Modeling the Neuro-Mechanical Control of a Soft-Tissue Organism"
Evolved a solution representing the firing of neurons for muscle contraction using genetic algorithms to successfully elicit motion in a SoftBot under Prof. Soha Hassoun.

06/2008 – 09/2008 **UCLA,** Dept. of Biochemistry • Westwood, CA
"Discovery of Novel Metabolic Types of Bacterial Microcompartments"
Implemented a pipeline for metagenomes to analyze potential proteins within bacterial micro-compartments (BMCs) to identify novel metabolic BMC types under Prof. Todd Yeates.

05/2007 – 08/2007 **Shire Pharmaceuticals,** Preclinical Dept. • Cambridge & Lexington, MA
Set up a secure database containing all clinical and research reports for all drugs currently produced or under testing.

06/2006 – 09/2006 **UMass Medical School,** Dept. of Molecular Genetics • Worcester, MA
"Identification of Genes Involved in Expansion of Chromosomal Repeat in E. Coli*"*
Developed a series of knockout bacterial strains and tested viability of bacteria and amplification of a specific chromosomal repeat under Prof. Anthony Poteete.

Posters, Presentations, & Panels

Mar. 18-22, 2014 **CSHL's Meeting on Systems Biology: Global Regulation of Gene Expression** • Cold Spring Harbor, NY
Poster: "Pervasive binding specificity variation Cys_2-His_2 zinc finger orthologs suggests trans mutations as major drivers of regulatory network divergence"

Apr. 13-14, 2012 **CRA-W's Graduate Cohort Workshop** • Bellevue, WA
Travel Award Recipient and Attendee

Apr. 9, 2011 **3rd Annual New England Undergraduate Computing Symposium** • Medford, MA
Panelist: Graduate School Application Process and Visit Experience
Poster: "Formatt: Correcting Protein Structural Alignments by Sequence Peeking"

Apr. 2, 2011 **Tufts 13th Annual Undergraduate Research Symposium** • Medford, MA
Oral Presentation: "Formatt: Correcting Protein Structural Alignments"

July 8-13, 2010 **Internat'l Conference on Intelligent Systems for Molecular Bio. (ISMB)** • Boston, MA
Student Volunteer

Apr. 17, 2010 **2nd Annual New England Undergraduate Computing Symposium** • Boston, MA
Poster: "Taking a Peek at the Seq: Improving Matt Structural Alignments by Considering Sequence Homology"

Oct. 9-10, 2009 **Midwest Women in Computing Conference** • Chicago, IL
Poster: "Cataloging Animal Retrocopies: An Annotation-Independent Methodology"

Teaching Experience

Princeton University, Dept. of Computer Science • Princeton, NJ

06/2013 – 07/2013 *Mentor for Summer Programming Experiences (Summer 2013)*
Co-advised three undergraduates on a summer project to build a secure voting mobile app

09/2012 – 05/2013 *Assistant Instructor for COS126: General Computer Science (Fall 2012 & Spring 2013)*
Teach precepts twice weekly, hold office hours, and grade assignments and exams.

09/2009 – 05/2010 **Tufts University,** Dept. of Computer Science • Medford, MA
TA for CS40: Machine Structure and Assembly Language Programming (Fall 2009)
TA for CS80: Programming Languages (Spring 2010)
Attended lectures, assisted in labs, held office hours (~10-18 hrs/wk), and graded assignments.

02/2009 – 06/2009 **Tufts University,** Dept. of Chemistry • Medford, MA
HHMI ARRAYS Project Programmer & Instructor
Analyzed *Illumina* sequencing output to discover new soil microbes, and taught bioinformatics seminars to Somerville High students about gene sequencing, alignment algorithms, and BLAST.

Extracurricular Activities & Outreach

09/2011 – Present **Princeton Grad. Women in Science and Engineering,** *Mentoring Program Participant*
08/2011 – Present **Tufts Alumni Admissions Program (TAAP),** *Applicant Interviewer*
05/2012 – 02/2015 **Princeton Grad. Student Government,** *CS Representative, Events Board member*
07/2012 – 05/2014 **Princeton Jewish Grad. Students & Young Professionals,** *President, Coordinator*
10/2009 – 05/2011 **Tufts Computer Science Reading Group,** *Member & Coordinator*
09/2008 – 05/2011 **Tufts Admissions Office,** *April Open House / Voices Host, Speaker at Engineering OH*
09/2007 – 05/2011 **Tufts Association for Computing Machinery, Women,** *Mentor & Outreach Contact*
03/2009 – 05/2010 **Tufts Pre-Dental Society,** *Site Designer & Webmaster*