

Shilpa Nadimpalli

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Education

- 09/2011 – Present **Princeton University**, School of Engineering • Princeton, NJ
M.S., Ph.D. in Computer Science
- 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

- 09/2011 – Present NSF's Graduate Research Fellowship (\$90k) for graduate study in STEM disciplines
- 09/2011 – Present Princeton's Gordon Wu Fellowship (\$19k) for engineering graduate study
- 08/2010 – 05/2011 Google's Anita Borg Memorial Scholarship (\$10k) for women in computer science
- 08/2007 – 05/2011 Tufts' Neubauer Scholarship (\$25.5k) 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 (\$2.5k) for scientific achievement (1 in 4 of ~5000)
- 06/2009 – 10/2009 CRA-W/CDC's Distributed Research Experiences for Undergrads Fellowship (\$6.5k)
- 09/2008 – 05/2009 CRA-W's Multidisciplinary Research Opportunities for Women Fellowship (\$4k)
- 06/2008 – 09/2008 NSF/NIH's Southern California Bioinformatics Summer Institute Fellowship (\$6k)

Research & Work Experience

- 03/2012 – Present **Princeton University**, Dept. of Computer Science • Princeton, NJ
Investigating the evolution of transcriptional regulatory networks through analysis of variation in Cys₂-His₂ zinc finger genes in *Drosophila sp.* and primates 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 microcompartments (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 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.

Peer-Reviewed Publications

- 2011 Daniels, N., **Nadimpalli, S.**, Cowen, L. (2011). “Formatt: Correcting Protein Structural Alignments by Sequence Peeking.” *BMC Bioinformatics*. (In submission.)
- Nadimpalli, S.**, Daniels, N., Cowen, L. (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 Rieffel, J., Saunders, F., **Nadimpalli, S.**, Zhou, H., Hassoun, S., Rife, J., Trimmer, B. (2009). “Evolving Soft Robotic Locomotion in PhysX.” *Proceedings of the 2009 ACM Conference on Genetic and Evolutionary Computation (GECCO '09)*. 11:2499-2504.

Posters, Presentations, & Panels

- 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

- 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

- 05/2012 – Present **Princeton Graduate Student Government**, *Computer Science Representative*
- 09/2011 – Present **Princeton Grad. Women in Science and Engineering**, *Mentoring Program Participant*
- 08/2011 – Present **Tufts Alumni Admissions Program (TAAP)**, *Applicant Interviewer*
- 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*