

CHAITANYA MURALIDHARA

Institute for Cellular and Molecular Biology

University of Texas at Austin, 1 University Station, A4800, Austin, TX 78712-0159
(512) 475-9423 (phone) | (512) 471-2149 (fax) | cmuralidhara@mail.utexas.edu

EDUCATION

Institution	Degree	Year	Field
Birla Institute of Technology and Science, Pilani, India	B.E. with Honors	6/2003	Computer Science
University of Texas at Austin	Ph.D.		Cell and Molecular Biology

RESEARCH EXPERIENCE

Ph.D. Candidate and Graduate Research Assistant, Institute of Cellular and Molecular Biology, University of Texas at Austin 1/2005–

Inferring conservation in sequence alignments through the application of matrix and tensor decomposition methods.

Graduate Research Assistant, Institute of Cellular and Molecular Biology, University of Austin at Texas 9/2004–12/2004
Designed and tested computationally aptamer beacons with Prof. Ellington.

Graduate Research Assistant, Department of Pathology and Laboratory Medicine, Emory University School of Medicine 5/2004–7/2004
Designed and populated a database system for CONFAC, a web-based tool for finding conserved transcription factor binding sites, under the guidance of Prof. Moreno.

Team Member, School of Biology, Georgia Institute of Technology 1/2004–4/2005
Annotated the genome of *Geobacillus thermoleovorans* with Prof. Zhulin.

Student Intern, Sun Microsystems India Engineering Centre, Bangalore, India 1/2003–6/2003
Tested and automated testing of the SunONE™ Identity Server Policy Agents over several builds, across different platforms and web servers.

TEACHING EXPERIENCE

Graduate Teaching Assistant, University of Texas at Austin
Biostatistics 1/2007–5/2007
Introductory Biology 9/2005–12/2005

SYNERGETIC ACTIVITIES

President's Volunteer Service Silver Award Medal, Town Lake Animal Center, Austin, Texas 2008

PUBLICATIONS

C. Muralidhara, A. M. Gross, R. R. Gutell and O. Alter, "Identifying Multiple Patterns of Evolution in an Alignment of 16S Ribosomal RNA Sequences by Using a Tensor Higher-Order Singular Value Decomposition," in preparation.

PRESENTATIONS

Talks at International Meetings

- C. Muralidhara**, A. M. Gross, R. R. Gutell and O. Alter, "Identifying Multiple Patterns of Evolution in an Alignment of 16S Ribosomal RNA Sequences by Using a Tensor Higher-Order Singular Value Decomposition," scheduled for the *Rao Conference at the Interface Between Statistics and the Sciences* (Hyderabad, India, December 30, 2009 – January 2, 2010), invited talk.

2. **C. Muralidhara**, A. M. Gross, R. R. Gutell and O. Alter, “Matrix and Tensor Singular Value Decompositions for Analysis of Large-Scale Sequence Alignment Data,” *2008 BMES Annual Fall Meeting* (Saint Louis, Missouri, October 2–4, 2008), contributed talk.
3. **C. Muralidhara**, R. R. Gutell, G. H. Golub and O. Alter, “Matrix Decompositions For Identifying Patterns of Evolution in RNA Sequences,” *2008 SIAM Annual Meeting* (San Diego, California, July 7–11, 2008), invited talk.
4. **C. Muralidhara**, R. R. Gutell, G. H. Golub and O. Alter, “Analysis of Sequence Alignments Using Singular Value Decomposition Singular Value Decomposition,” *Heraeus International Summer School on Statistical Physics of Gene Regulation – From Networks to Expression Data and Back* (Bremen, Germany, July 16–28, 2007), contributed talk.

Posters at International Meetings

5. **C. Muralidhara**, A. M. Gross, R. R. Gutell and O. Alter, “Identifying Multiple Patterns of Evolution in an Alignment of Sequences of 16S Ribosomal RNA Using the Singular Value Decomposition,” *74th Cold Spring Harbor Symposium Quantitative Biology* (Cold Spring Harbor, New York, May 27 – 1 June 1, 2009), contributed poster.
6. A. M. Gross, **C. Muralidhara**, R. R. Gutell and O. Alter, “Singular Value Decomposition Analysis of 5S and 23S rRNA Sequences from the Three Domains,” *2008 BMES Annual Fall Meeting* (Saint Louis, Missouri, October 2–4, 2008), contributed poster.
7. **C. Muralidhara**, A. M. Gross, R. R. Gutell and O. Alter, “Singular Value Decomposition Analysis of 16S rRNA Sequence Alignments Reveals Phylogenetic Subgroups and Corresponding Characteristic Sites,” *20th Cold Spring Harbor Laboratory Annual Meeting on the Biology of Genomes* (Cold Spring Harbor, New York, May 6–10, 2008), contributed poster.
8. **C. Muralidhara**, R. R. Gutell, G. H. Golub and O. Alter, “Exploring Phylogenetic Relationships in Sequence Alignments Through Singular Value Decomposition,” *Stanford/Yahoo! Workshop on Algorithms for Modern Massive Data Sets* (Stanford, California, June 21–24, 2006), contributed poster.

AWARDS

1. Graduate Student Professional Development Award, University of Texas at Austin 12/2008
2. NSF Graduate Student Travel Award, 2008 SIAM Annual Meeting 7/2008
3. National Talent Search Examination Scholarship from the National Council for Educational Research and Training, Government of India 7/1997–6/2003

PROFESSIONAL ACTIVITIES

1. Co-Organizer, Invited Minisymposium “Mathematical Analyses of Biological Sequences,” 2008 SIAM Annual Meeting 7/2008
2. Organizer, Bioinformatics and Computational Biology Journal Club of the Cell and Molecular Biology Graduate Program, University of Texas at Austin 8/2006–

PROFESSIONAL SOCIETIES

- Student Member, Biomedical Engineering Society (BMES) 7/2008–
 Student Member, Society of Industrial and Applied Mathematics (SIAM) 5/2007–

PHD ADVISOR

Orly Alter, Biomedical Engineering, University of Texas at Austin.