
EDUCATION

Ph.D. in Biochemistry and Cell Biology*Aug. 2016 – Current*

MD Anderson UTHealth Graduate School of Biomedical Science, Houston, TX

GPA: 3.8/4.0

5 Year Integrated M.Sc. Biotechnology*July. 2007 – Aug. 2012*

Institute of Bioinformatics and Biotechnology, University of Pune, Pune, India

GPA: 5.12/6.0

EXPERIENCE

Graduate Research Assistant*Aug 2016 - Current*

McGovern Medical School, Dept of Integrative Biology & Pharmacology, Houston, USA

Gorfe Research Group

- Investigating the effect of transmembrane potential on lipid structure and dynamics and its effect on cell proliferation.
- Studying the structural dynamics of the RAS-subfamily of proteins in the context of cancer signaling.

Project Engineer*May 2014 - Aug 2016*

Center for Development of Advanced Computing (C-DAC), Pune, India

Bioinformatics Group

- Developing an all-atom structural model for the Kv11.1 voltage-gated potassium channel for a pharmaceutical company.
- Investigating the structural dynamics of Kv11.1 by computational docking with inhibitors.
- Developing knowledge-based scoring function for discriminating native and near-native protein structures.

Junior Research Fellow*Aug 2012 - May 2014*

Center for Development of Advanced Computing (C-DAC), Pune, India

Evolutionary Computing & Image Processing Group

- Developing supervised learning algorithms based predictive models for various biological classification problems.
- Developing hybrid filter-wrapper optimization algorithms for Gene Selection and Biomarker Discovery.

Project Student*June 2011 - Aug 2012*

Indian Institute for Science Education & Research (IISER), Pune, India

Self Organization and Cell Morphogenesis Lab

- Developing probabilistic model of spatial organization of chromosome territories.
- Investigating principles governing chromosome positioning during interphase & mitosis and their inheritance through mitosis.

Project Student*June 2009 - May 2010*

Institute of Bioinformatics and Biotechnology, University of Pune, Pune, India

- Optimization of synthesis of gold nanoparticles utilizing a psychrotrophic marine yeast *Yarrowia lipolytica*.
- Characterization of gold nanoparticles using various spectroscopic techniques.

PUBLICATIONS

- Lin, X., **Nair, V.**, Zhou, Y., & Gorfe, A. A. (2018). Membrane potential and dynamics in a ternary lipid mixture: insights from molecular dynamics simulations. *Physical Chemistry Chemical Physics*, 20(23), 15841-15851.
- Gurav, A., **Nair, V.**, Gupta, U., & Valadi, J. (2014). Glowworm Swarm Based Informative Attribute Selection Using Support Vector Machines for Simultaneous Feature Selection and Classification. In *Swarm, Evolutionary, and Memetic Computing* (pp. 27-37). Springer International Publishing.
- **Nair, V.**, Dutta, M., Manian, S. S., Kumari, R., & Jayaraman, V. K. (2013). Identification of Penicillin-binding proteins employing support vector machines and random forest. *Bioinformation*, 9(9), 481.
- **Nair, V.**, Sambre, D., Joshi, S., Bankar, A., Ravi Kumar, A., & Zinjarde, S. (2013). Yeast-derived melanin mediated synthesis of gold nanoparticles. *Journal of Bionanoscience*, 7(2), 159-168.

AWARDS & HONOURS

- Cell & Regulatory Biology Program Travel Award, Spring 2017
- Placed Second in Oral Presentations in *Young Speaker Program* at **Accelerating Biology 2016: Decoding the Deluge**, January 19-21, 2016, Center for Development of Advanced Computing, Pune, India
- **CSIR-UGC NET Junior Research Fellowship (2012)** - All India Rank 55
- Graduate Aptitude Test in Engineering (GATE) qualified

WORKSHOPS / MEETINGS / CONFERENCES ATTENDED

- **23rd Structural Biology Annual Symposium**, April 28, 2018, Sealy Center for Structural Biology & Molecular Biophysics, Galveston, TX, USA
- **22nd Structural Biology Annual Symposium**, May 6, 2017, Sealy Center for Structural Biology & Molecular Biophysics, Galveston, TX, USA
- **Hands-on Workshop on Computational Biophysics**, May 30-June 2, 2017, Pittsburgh, PA, USA
- Workshop on **Statistical mechanics of biomolecular solution and its application to *in-silico* drug design**, January 27 - February 9, 2016, Jawaharlal Nehru University, New Delhi, India
- **Accelerating Biology 2016: Decoding the Deluge**, January 19-21, 2016, Center for Development of Advanced Computing, Pune, India
- **Accelerating Biology 2015: Catalyzing Evolution**, January 20-22, 2015, Center for Development of Advanced Computing, Pune, India
- **Accelerating Biology 2012: Computing to Decipher**, February 15-17, 2012, Center for Development of Advanced Computing, Pune, India
- **Colloquium on Emerging paradigms in Physical Biology**, August 27-28, 2011, National Centre for Biological Sciences, TIFR, Bangalore, India
- **2nd International Symposium on Mass Spectrometry in Life Sciences**, August 23-26, 2011, National Centre for Biological Sciences, TIFR, Bangalore, India
- **World Congress on Biotechnology** organized by OMICS group, March 21-23, 2011, Hyderabad, India
- National conference on **Recent Trends in Biotechnology and Industry Academia Interaction**, March 8-9, 2010, University of Pune, Pune, India
- **International Symposium on Microbial Biotechnology : Diversity, Genomics and Metagenomics** at the 49th Annual Conference of Association of Microbiologists of India, November 18-20, 2008, University of Delhi, Delhi, India

POSTER PRESENTATIONS

- Lin., X., **Nair, V.**, Zhou, Y. & Gorfe, A. A. *Membrane Potential and Lipid Dynamics: Molecular Dynamics Analysis based on Three Different System Setups*. At: **23rd Structural Biology Annual Symposium**, Sealy Center for Structural Biology & Molecular Biophysics, Galveston, TX, USA, April 28, 2018.
- **Nair, V.**, Jani, V., Sonavane, U., & Joshi, R. *HELENUS: Scoring Function for Discrimination of Native and Near-Native Protein Conformations*. At: **Accelerating Biology 2016: Decoding the Deluge**, Center for Development of Advanced Computing, Pune, India, January 19-21, 2016.
- **Nair, V.**, Joshi, S., Ravikumar, A., Zinjarde, S. & Kulkarni, S. *Synthesis of Gold Nanoparticles by a Psychrotrophic Marine Yeast*. At: **49th Annual Conference of Association of Microbiologists of India, International symposium on Microbial Biotechnology : Diversity, Genomics and Metagenomics**, New Delhi, India, November 18–20, 2008.

MENTORING/TEACHING EXPERIENCE

- Mentored eight MSc Bioinformatics students from Rajiv Gandhi Institute of Information Technology & Biotechnology(RGITBT), Bharati Vidyapeeth Deemed University (BVDU) in their MSc dissertation thesis for the academic years 2012-2013 and 2013-2014.

EXTRA-CURRICULAR ACTIVITIES

- Served on the Organizing Committees of
 - Symposium on **Accelerating Biology 2016: Decoding the Deluge**, January 19-21, 2016, Center for Development of Advanced Computing, Pune, India.
 - Symposium on **Accelerating Biology 2015: Catalyzing Evolution**, January 20-22, 2015, Center for Development of Advanced Computing, Pune, India.
 - **Biofest 2011**, Inter-departmental Social and Cultural event at the Pune University, Pune, India.
 - **University Cell for Biological Sciences**, Inter-Departmental group in the Pune University that arranged seminars and lectures by experts from academia and industry.
 - National conference on **Recent Trends in Biotechnology and Industry Academia Interaction**, March 8-9 2010, University of Pune, Pune, India.
 - **Industry - IBB interactive Meet**, March 7-8 2008, Institute of Bioinformatics and Biotechnology, University of Pune, Pune, India.
- Completed Certificate course in German from University of Pune.
- Worked part-time as a Web-content writer at Cubesquare Informatics.
- On the Editorial Board of the School Magazine, 2006-2007.
- Was a Scout Cub and was the Leader and Camp-Commander of a group consisting of three troops having 120 members in all (2004 - 2005).