

EDUCATION

PhD. in Quantitative and Systems Biology

2013 - Present

University of California, Merced , GPA 3.8/4

Thesis - "Methods for novel identification, structural and genomic analysis of oncogenes in Melanoma"

Bachelor of Technology in Bioinformatics

2008 - 2012

Vellore Institute of Technology , GPA 3.67/4

Thesis - "Automated construction and analysis of polyunsaturated fatty acid autoxidation reaction network using machine learning based pattern matching algorithm in Mathematica"

Bachelors' Thesis Research Project, Molecular Systems Biology Group ; Salvador Lab

2012

University of Coimbra, Portugal

EMPLOYMENT

Junior Specialist , Filipp Lab, University of California, Merced

2012 - 2013

Project - Analysing *NGS (Next Gen. Sequencing)* data of (*PKM2*) gene obtained from *The Cancer Genome Atlas (TCGA)* and *CGHub* database. The project aimed at retrieval, management and analysis of sequencing data.

Junior Specialist , Savageau Lab, University of California, Davis

2012

Project - Statistical Modelling and mathematical verification of Restriction-Modification systems in *E.coli*. The project aimed to construct a working mathematical model using RNASeq expression data from *Pvull* gene expression.

Research Intern ; X-Code Life Sciences

2011

Project - Analysing the oncogenic effects and disease association of germline mutations (SNP) in NGS data using GWAS.

RELEVANT SKILLS

- *Programming Languages* - R, Python and BASH
- *Bioinformatics tools* - GATK, GROMACS, Galaxy, Tuxedo Suite, InVEx, Mutect, Paradigm, GSEA
- *Technologies* - Linux Administration, Database Management Systems (Oracle 9i, SQL)

PROJECTS

Academic Projects - 4 ; Industry Projects - 2 ; Personal Projects - 2

A3 University of California, Merced ; Graduate Student

Genomic analysis of next generation sequencing data obtained from Melanoma patients (TCGA SKCM dataset) to study significant drivers and metastatic marker genes during cancer progression using existing and novel bioinformatics tools.

A2 University of California, Merced ; Graduate Student

Molecular dynamic simulation of *PKM2* protein using GROMACS to study the structural changes that occur upon fructose 1-6 phosphate (FBP) binding event which converts the protein into regulated form essential for cancer progression.

A1 University of California, Merced ; Graduate Student

Rule based construction of Fatty Acid elongation and desaturation network in human fatty acid metabolism. Machine learning approach in Mathematica was used to construct an extensive network of all the possible lipid compounds.

P1 mutbase -(github.com/Ambuj-UF/mutbase)

R library for studying pathological affect of genetic mutations. Package is under initial developmental stage and mutbase team invites people to contribute with their ideas and coding skills.

ACADEMIC APPOINTMENT

- Reviewer(AdHoc)–Journal of Cell Biology and Genetics.(JCBG-03.08.14-0037)
- Teaching Assistant BIO175 (Biostatistics) - Spring 2015 semester.
- Graduate Student Researcher, Filipp Lab - Fall 2013, Fall 2014.

PUBLICATIONS

Publications - 3 ; Citations - 10 ; h-index - 1 (Source - Google Scholar - 03/2016)

- J3 Lauren Edwards, Rohit Gupta, Fabian Filipp '*Hypermutation of DPYD Deregulates Pyrimidine Metabolism and Promotes Malignant Progression*' Molecular Cancer Research (Mol Cancer Res; 14(2); 196-206).
- J2 Jian Guan, Rohit Gupta, Fabian Filipp '*Cancer systems biology of TCGA SKCM: Efficient detection of genomic drivers in melanoma*' Scientific Reports (Sci Rep. 2015 Jan 20;5:7857).
- J1 Rohit Gupta*, Mrinal Mishra, Prateek Tandon, Raunak Hisaria '*Novel mutation predicted to disrupt SGOL1 protein function*' Egyptian Journal of Medical Human Genetics (Rohit et. al, EJMHG 4(2013) pp 149-155).

INVITED TALKS, ORAL PRESENTATION AND CONFERENCES

Selected Talks- 1 ; Invited Talks - 0 ; Conferences - 5

- T1 Rohit Gupta, Fabian Filipp '*Cancer Systems Biology of Melanoma to identify cancer drivers*' ISCB Great Lakes Bioinformatics Conference GLBIO, Purdue University, May 2015.
- C5 Rohit Gupta, Fabian Filipp '*Detecting cancer drivers from TCGA SKCM dataset*' Big Data in Biomedicine Conference, Stanford University, Palo Alto, May 2015.
- C4 Rohit Gupta, Fabian Filipp '*Cancer Systems Biology of Melanoma to study the eminent driver genes in TCGA SKCM dataset*' UC Global Health Day 2015 (UCGHD), Los Angeles, April 2015.
- C3 Rohit Gupta, Fabian Filipp, Michael Colvin '*Simulations of the structural switch in PKM2 mediating the Warburg Effect in Cancer*' 58th Annual Biophysical Society Meeting, San Francisco, February 2014.
- C2 Rohit Gupta, Ambuj Kumar '*Designing a medical data publishing security algorithm by advancement of k-Anonymity and (n, t) closeness technique*' 22nd International Genome Informatics Conference (GIW), South Korea, December 2011.
- C1 Rohit Gupta '*Genomic and Structural analysis of -myosin S2 fragment mutations involved in congenital Heart Disorders in Humans*' IEEE Bioinformatics Biomedicine Conference (IEEE BIBM), Atlanta, November 2011.

FELLOWSHIPS, HONORS, AND AWARDS

- 2015 QSB USAP Summer Research Fellowship; UC Merced.
- 2015 QSB Travel Awards; UC Merced.
- 2015 UC Global Health Day Travel fellowship and Registration waiver.
- 2012 Semester Abroad Program (SAP) scholarship for bachelors thesis; Vellore Institute of Technology.

RESEARCH RECOGNITION

- Research article (J2 / Sci Rep. 2015 Jan 20;5:7857) featured on abc30 news (abc30.com/504808) , Merced Sun-Star, Los Banos Enterprise and UC Merced news.

PROFESSIONAL MEMBERSHIP

- International Society of Computational Biology (ISCB)
- International Associations of Engineers (IAENG)