

# Saurin D. Jani

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## Summary:

**Bioinformatician/Statistical research analyst/Computational Biologist with more than 5 years of experience in:**

- ❖ **Designing web based bioinformatics modules**
- ❖ **Microarray/Gene Expression data analysis using R/Bioconductor/Linux**
- ❖ **Working with researchers from various fields such as regenerative medicine, cancer, neuroscience and psychiatry**

Currently I am working as Bioinformatician/Statistical and Research Analyst at Department of Regenerative Medicine and Cell Biology, **Medical University of South Carolina, SC**. Presently my work involves analysis of DNA microarray data using statistical methods (R/Bioconductor) in field of cancer, neuroscience and psychiatry. I am actively working on designing web-based modules which analyzes various gene expression data using R/Bioconductor/PERL scripts. I am also involved in writing backend controller scripts in PERL/BioPerl/java/jython/python to handle I/O for various analytical scripts, which presents results to researchers in highly informative manner. I am also involved in analyzing data from animal models such as mouse and rat gene knockouts for cocaine and alcohol addiction in neuroscience research field.

My recent publication is: **ArrayQuest: a web resource for the analysis of DNA microarray data [Pubmed ID: 16321157]**. I have also worked as intern at ArrayGenetics, CT, US. My work involved designing and implementing ArrayQuest™ system, which is web-based analysis of microarray data. I have worked as student research assistant at **Yale School of Medicine** - Pathology Informatics Department, CT, where my work involved writing PERL Clients, which communicate with SOAP web services, connected to R analytical engine for DNA/Tissue microarray data analysis. During that time as a student, I have also worked on small project writing relative rate test algorithm in evolutionary biology for phylogenetic analysis of protein coding gene sequences in various species. My extensive computational experience involves writing various analytical scripts such as R scripts, PERL, CGI, JavaScript (including jQuery), Jython, Python, PHP, Shell, programming in C & C++, Java and Database administration (MySQL, Oracle) on Unix/Linux environment.

## Experience:

### Skills:

### Bioinformatics Skills:

**2004 - present**

**As Statistical and Research Analyst  
Medical University of South Carolina, SC**

### Work involved:

- Writing R scripts to analyze DNA microarray data
- Install and maintain R/ Bioconductor Modules on Linux server
- Designed web-based modules to analyze microarray data using R, Perl, Python, Java, Jython, flash on cluster computer
- Designing Network Visualization tools for gen-gene interaction data using Java, jython, Python

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- Analysis of various disease data sets such as cancer, cocaine/ alcohol addiction that help researchers to identify genes that are differentially expressed during disease condition.
- Working with researchers from various fields such as cancer, neuroscience and psychiatry to help them analyze their DNA microarray data to identify genes that are actively involved in diseased condition in patients or animal models.
- My current web-based project GeneMesh helps researchers to load their microarray data and classify genes associated with certain diseases or conditions in exceptionally easy to use method.
- Provided training to the researchers for web-based microarray analysis software.

**2004**

**As Intern:**

ArrayGenetics.com, sandy hook, CT

**Work involved:**

- Designing and implementing **ArrayQuest™** module, which is web-based analysis of microarray data.
- Actively involved in writing R analytical scripts using bioconductor
- Writing backend controller scripts to facilitate I/O to other R scripts
- Facilitating output of analytical data to researchers (end users) in highly informative manner
- Designing database (MySQL) for microarray data and also writing PHP scripts for front-end action.

**2003 - 2004**

**As student research assistant:**

Yale School of Medicine, New Haven, CT

**Work involved:**

- Designed PERL clients to communicate with R - Analytical Engine through Web services for DNA/Tissue microarray data analysis.
- SOAP implementation for PERL clients

**2003 - 2004**

**As student:**

Yale University, New Haven, CT

**Work involved:**

- Designed algorithm of Relative Rate Test for Phylogenetic Analysis of protein coding gene sequences in evolutionary genetics.

**2002**

**As student (part of course):**

Rutgers University, NJ

- Project on Human Disease, DUCHENNE MUSCULAR DYSTROPHY (DMD) using Genome Databases, GCG, BLAST and Web based tools for Biological sequence analysis.

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## Work involved:

- Genetic location of Dystrophin Gene
- Statistical analysis of gene location
- Molecular analysis of gene
- Analysis of Gene Map Information
- Related gene information analysis in Drosophila, Caenorhabdits, Saccharomyces and Ecoli
- 3D structure of Protein known
- Analytical Software: SPSS, GCG, BLAST and Cn3D Protein software
- Databases: NCBI - Gene Bank, EMBL, DDBJ, TIGR, PDB - for Protein structure analysis

## Computational Skills:

- Writing statistical R Scripts
- Install/maintain R/Bioconductor modules for microarray analysis
- LINUX,UNIX OS, NT 4.0 LAN, Mac OS, Windows
- Advance Programming in C & C++
- Perl, PHP, Java, Java Script (jQuery), Python, jython, Flash, XML
- Install and configure Web servers: Apache and Tomcat
- Databases: ACCESS, MYSQL, Oracle
- Database Administration
- SQL Programming
- RDBMS Application Development
- Web Designing
- Assembler Language- IBM 370 MVS and Networking

**2001-2003**

## Graduate Assistant:

Department of Social Work, Monmouth University, W. Long Branch, NJ, US

## Responsibilities:

- Coding the System in ASP,HTML, JavaScript, PHP
- Generated reports & Report template
- Tested and Integrated software on UNIX, Windows, Linux OS
- Operation: Technical Information, Performance, Analysis and Monitoring Data.
- Secretarial: Share/Debentures information.

**1997 - 1998**

- **Laboratory Technician:** Astha Diagnostic Pathology Labrotory, Ahmedabad, Gujarat, India [part time]

## Responsibilities as Laboratory Technician:

- Microbiology work under Lamina-Air-Flow
- Hemogram on cell counter - ERMA-PC-607 and investigation for Anemia
- Worked with Biochemistry on ACTO-I and Dry Chemistry

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(John & John)

- Histopathology, cytology, FNAC

## 2001 & 2002

**Training:** [Infopro Corporation](#) Woodbridge, NJ

- Training for implementing intra network for corporation offices
- Quality Analyst for [ITCrunch.com](#) website

## 2001 -2003

- Simulation of Multi Robot System – Monmouth University

### Projects:

- Used algorithms that can control multiple mobile robots and so, one can study the complexity of such systems.
- This analysis was made possible through the creation of a Java1.2.9 application to run dynamic Simulations.
- Each mobile agent is programmed with the same simple algorithm that causes the group to exhibit a complex behavior.

- Digitization of media – making portfolios for Monmouth University Students

**Job Included:** This project started in fall 2002 – fall 2003. Teamwork project, work involved digitization of media that students have for their career work and make a portfolio application in flash and burn that on CD. The Portfolio, which was created, according to student's academic achievements and program information is very useful in presenting themselves in corporate sector for their professional career and career assessment.

- Designed & maintained website for Department of social work, Monmouth University, NJ

### **Job Included:**

- Designed this website for Developing International Curriculum for Department of Social Work - Monmouth University and Department of Social Work - Latvia, this project is sponsored by [Department of State, USA](#)
- Maintained and developed software for department requirements.
- Provided solutions for various levels of computer software and hardware problems and networking problems in department.

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**1998** Bachelor of Science – Microbiology Gujarat University – R.G. Shah  
Science College, Ahmedabad, Gujarat, India

- Research Project: Citric Acid fermentation

## **Education:**

**2003** Master of Science in Computer Science  
Monmouth University, West Long Branch, NJ

**1998** Bachelor of Science – Microbiology  
Gujarat University – R.G. Shah Science College, Ahmedabad, Gujarat,  
India

## **Member of:**

- Argraves Laboratory
- Proteogenomics Facility
- SC INBRE Bioinformatics Core
- Medical University of South Carolina

## **References:**

Available upon request