Vijayam RajaSangeetha

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**Summary**

Bioinformatics graduate student with 15 years of software development experience in banking. Looking forward to exploring and expertise in Bioinformatics software design, development, and engineering opportunities.

**Education**

University of North Carolina |   Charlotte, NC   | In Progress (12/2022)

Master of Science: Bioinformatics GPA: 3.89

Srikrishna College of Engineering and Technology, Bharathiar University |   Tamilnadu, India

Bachelor of Engineering: Information Technology Percentage: 79.5%

**Technical Skills**

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| --- | --- |
| * Python, Pandas, Numpy, Jupyter NB, Atom, Unix * Data Analysis and Database design and development * Bio python, data statistical visualizations * Data acquisition and Data Modeling * NGS Analysis – FASTQC, Prokka, IGV, Artemis * Mathematica, Rules engine, Informatica, ETL * Gradle, Docker, AJAX, jQuery, JSON, XML, XSD * JDBC, MS SQL 2005, Stored procedures * Team City, GIT, Jenkins, JUNIT, Mockito, Jacoco * REST, JMS, Tomcat, Splunk, Docker * IBM Operational Decision Manager 8.5.1, * ILOG JRules, Agile, JIRA, ANT, JMeter 5.1 * Agile and Waterfall, Gradle Nimble methodology * CICD, Bioinformatics Pipeline | * Spring, Spring Boot, Struts * Web services, SOA, REST, SOAP, * Software design, development, testing and deployment. * Data management, Object oriented programming * Bioinformatics analysis, R Programming * Trinity, UCSC table browser * SPADES, QUAST, BOWTIE2, HPC * JAVA, J2EE, JSP, JSF, JMS, MDB, * SQLite, DB2 11.1, Oracle, Sybase * JAXB, JAXP, Axis, GLUE, Service Now * Servlets, JDBC, Maven, Ant, Jenkins * Rational Rose, Microsoft Visio, Docker * IBM Web Sphere, WebLogic, Kibana * Machine Learning |

**Academic Projects**

Independent Study Project – Fall 2022

Open-source software to estimate the durability of immunity using comparative evolutionary approaches

* To develop a python-based adaptation of Mathematica models that facilitates integration of phylogenetic, antibody, and infection data from a focal pathogen and its closest living relatives to estimate the durability of the immune response following natural infection or vaccination.
* To develop open-source project, which is freely available via GitHub, and to enable community use of these methods to aid future public health predictions of the immunity and long-term efficacy of vaccine-based interventions that, in turn, can mitigate unnecessary morbidity and mortality.
* collect, process, visualize and analyze vaccine data

Class Project 3 – Fall 2021

**Domestication impact on tomato flavor**

* This is a statistics project was developed to test the hypothesis that tomato consumers say there is a flavor difference between the different types of tomatoes and that sweetness is considered a ‘good’ contributor to fruit, we expect consumer preference to be statically different across groups when tested, and that sugar content will increase with consumer preference.
* To test for the above-stated hypothesis, three main tests were used, Analysis of variance (ANOVA) to test for the statistical difference in consumer preference, a Two-Sample Z-test to test the level of MHO in the different variates and lastly, a linear regression to analyze the association between sugar content and consumer preference.

Class Project 2 – Spring 2021

COVID Impact on employment

* Report generation using Pandas on COVID infection data
* Analyze COVID data set - Census data
* To plot bar graph, line graph and pie chart relating population, age and covid count. Report of impact on unemployment in Tableau and Python

Class Project 1 – Spring 2021

miRNA database development

* To design and develop miRNA associated database (mRNA, Pathway, Disease interaction database) by collecting data from different biodata web resources mirWalk, misBase, targetMiner, targetScan
* To Create conceptual model and design the ER diagram.
* Technical environment: SQLite

**Experience**

Internship – University of North Carolina at Charlotte – May 2022 till date

[**https://carolinafishes.github.io/**](https://carolinafishes.github.io/)

**Title: The evolution of immunogenetic diversity in Holocentridae, an emblematic clade of nocturnal coral-reef fishes**

* To describe the sequence diversity of toll-like receptors, diverse immunoglobulin containing proteins, and novel immune type receptors, three key gene families of the innate immune system
* Transcriptomes and genomes are searched for sequences
* Sequences are verified using maximum likelihood based phylogenetic inference and PFAM analyses
* Results will form a critically needed comparative basis for investigations of innate immunogenetic diversity in tropical coral reef fishes
* Design and development of pipelines and workflows

Graduate Research Assistant - North Carolina Research Campus – Jan 2022 till May 2022

[**https://elizcooperlab.com/people.html**](https://elizcooperlab.com/people.html)

* Used Repeat Modeler to identify repeat element boundaries and family relationships and to refine/classify the families and to produce the library of transposable element (TE) families for Wyeomyia Smithii sequence.
* Used Repeat Masker to screen the sequences for interspersed repeats and get the query sequences with masked annotated repeats.
* Used Infernal for finding RNA structure and sequence similarities and to identify RNA homologs with their secondary structure
* NGS data analysis and proteomics datasets

Graduate Teaching Assistant – Aug 2021 till Dec 2021 & Aug 2022 till Dec 2022

* Conducted Lab’s and graded assignments for the Python programming course.
* Held office hours to help students resolve issues related to coursework, assignments.
* Graded assignments & homework’s for 20 Undergraduates, Master’s, and PhD students.
* Prepared course material for sequence Analysis course for undergraduates

**Senior Software Engineer - Freddie Mac. Mc Lean VA, Morgan Stanley. New York City NY, TCS Bank of America. USA & INDIA Jan 2005 to Jan 2021**

* Experience in analysis, design, development, deployment, and maintenance of enterprise and web-based internet/intranet applications using Java, J2EE Technologies for Banking and Finance domain.
* Facilitated new release activities, fine tuning of application performance
* Experience in Nimble, Agile and Water Fall methodologies
* Possess valuable experience in working with Client Managers, Business Teams and end users in analysis, requirements gathering, Testing and Production Support.
* Worked on Loan processing systems in Investment and Capital Marketing, Fees transactions systems in Deposits and claims processing in Financial Advisor Platforms
* Developed messaging platform to send loan updates to down streams by creating the trigger file
* Worked on Conversion projects to convert into different technical platforms
* Supported Component Integration Testing, System Integration Testing, Quality Assurance Testing and load testing
* Migrating legacy java to Spring boot framework for claims processing (cancel, approve claims) for *COC (Common Components)*project in financial advisor platform
* Developing JMS messaging platform to send approved loan updates to down streams by creating the trigger file placed for the ETL process to pull the data.
* Enhancement of *LIA UI (Loan in Acceleration User Interface)* for Single-family and LPMS desk to perform auditing of the process to approve loan sale data in Investment and Capital Marketing domain
* Migration of LIA application into Docker (cloud ready) environment
* Development and enhancement of Smile way Wellness Benefits web service for delta dental of California
* Created batch framework for SmileWay batch processing
* ODM (*Operational Decision Manager*) Rules development using Java XOM for BPM workflow dashboards
* Rules development using XSD for Enterprise Decision Service to apply decisions against borrower liabilities, income, and assets. Loan Origination web service calls the decision engine to evaluate the loan before applying the feedback logic parameters.
* Design, Implementation, Authoring, deployment and publishing Rules into Decision Centre to validate and update the Client and account Database with all the profile updates carried out by the financial advisors, to merge and synchronize the profiles, to provide a well-defined infrastructure to authorize the profile maintenance operations
* Development of HTDS with Rules for GWIM project
* Implementation of Rules with J2SE(POJO) for Point-to-Point money transfer
* Developed web services using Axis 2 for Fee transfer, waiver, refund projects in Deposits
* Enhancement of Corkite UI using Spring for Traded products for preparing its process, subprocess, Risk, and Control assessment.
* Consumed GBAM (Global Banking and Markets) product web services/REST
* Responsible for setting up automated builds and deployments in test environment.
* Involved in design and development for ETL Modules for Future State Infrastructure project
* Involved in Autosys setup and security certificate implementation for Borrower Benefits project
* Created Class diagrams & Sequence diagrams
* Migrated legacy java to Spring boot framework
* Involved in the test-driven development by interacting with SIT and QA team

**Process Experience**

* Worked as a resourcing coordinator and placed 150 associates in 3 weeks of time frame.
* Handled several Internal, External Quality assurance and Final inspection tasks.
* Performed Offshore technical Leader role to deliver the project before the stipulated time.
* Responsible to provide estimates for the deliverables, for overall delivery of the project and Co-ordinated 5-member team
* Performed Internal Quality Assurance, External Quality Assurance and Final Inspection for the offshore deliverables
* Worked on Project Planning, Monitoring and Metrics Reporting
* Managed 8 members team and performed the appraisal process
* Presented the deliverables, test results to the stakeholders for sign off.

**Certifications & Accomplishments**

* Sun Certified Java Programmer (SCJP) for Java 2 Platform.
* Sun Certified Web Component Developer (SCWCD).
* IBM Certified Solution Developer - InfoSphere DataStage v8.5
* Completed Cell and Molecular Biology course in Universal Class Online
* Completed Organic Chemistry I course in University of New England Online
* Smile Award 2010 Tata Consultancy Services, India

For working as a recruitment coordinator for TCS Bank of America 500 associates within short period of time

* On the Spot Award 2006 Tata Consultancy Services, India

For technical excellence

* Secretary - BiAS (Bioinformatics Assembly of Students) at UNC-Charlotte
* Member - International Student Advisory Committee at UNC-Charlotte
* **UNC Charlotte Commencement Bell Ringer** Fall 2022

**Volunteering Experience**

* Volunteering in Fleurix- Celebrate Women+ in Technology conference Sep 2022
* Raceday setup – Charlotte Racefest Marathon Apr 2022
* Local Park and stream cleanup - Charlotte Mecklenburg Storm Water Services, Mar 2022
* Humanity of Charlotte to build houses for homeless 2012
* Gardening activity in Jacksonville to setup garden in front of the school for physically challenged kids 2008
* Involved in rescue activities in Tsunami affected areas in Chennai, India 2005