SUBBARAMIREDDY REMALA

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EDUCATION

Northeastern University **Boston, MA**

Master of Science in Bioinformatics with Omics concentration ***September 2022 - Present***

- Relevant course work: Bioinformatics Programming, Computational Methods-1, Bioinformatics and Computational Methods-2, Statistics using R, Collecting Storing and Retrieving Data, Genomics.

Vellore Institute of Technology (VIT) **Vellore, IN**

Master of Science in Integrated Biotechnology

- Relevant Course work: Molecular Biology and Cell Biology, Microbiology, Immunology, Genetic Engineering, Bioprocess, Aquatic Biotechnology, Cell culture Technology, Fundamentals of Mathematics.

SKILLS

Operating skills: Linux/Unix, Windows, HPC cluster.
Version Control: Git.
Programming skills: Python, BioPython, Hail, R, shell scripting.
Bioinformatics skills: Genome Assembly, GWAS, scRNA-seq, ChIP-seq, Bulk RNA-seq, DNA Methylation Analysis, Transcriptome Assembly, Differential Gene Expression Analysis, KEGG and Gene Set Enrichment Analysis, String Network Analysis, Phylogenetic Tree Analysis.
Bioinformatics Tools: Plink, Trimmomatic, SPAdes, QUAST, Seurat, STAR, HISAT2, FeatureCounts, HTseq, Bowtie2, Trinity, DESeq2, ClusterProfiler, BLAST, Clustal Omega, BEAST2.
Data Analysis Platform: All of Us Research, UK Biobank.
Wet lab Techniques: PCR, qPCR, cDNA Synthesis, Gel Electrophoresis, DNA/RNA Isolation.

WORK EXPERIENCE

Research Analyst I Coop (Bioinformatics) ***Jan 24 - Present***

Brigham and Women's Hospital - Harvard Medical School

Genetic Mimics of GLP-1Ra and SGLT2i Therapy, Heart Failure and Chronic Kidney Disease Outcomes

- Analyzed whole exome sequencing data from the All of Us Research Program to evaluate the impact of genetic mimics of GLP1-Ra and SGLT2i therapy on cardio-kidney outcomes.
- Applied elastic net regression and linkage disequilibrium pruning to identify variants linked to lower hemoglobin A1c levels.
- Developed genetic scores to simulate lifelong GLP1-Ra and SGLT2i treatment, encompassing 245,388 participants with varied demographics.
- Demonstrated that higher GLP1-Ra genetic scores significantly reduced the risk of coronary artery disease, heart failure, and chronic kidney disease, with these associations not modified by the SGLT2 inhibitor genetic score.

Computational Biology Intern ***May 23 - August 23***

Carpenter Lab, Indiana University

Integrative Analysis of RNA-seq Data of Breast Cancer: A Bioinformatics Approach for Gene Expression Profiling and Pathway Analysis.

- Utilized Python and Bioinformatics tools for RNA-seq data preprocessing and quality control.
- Conducted RNA-seq alignment and quantification using HISAT2 and featureCounts.
- Performed Differential Expression Analysis, KEGG Pathway Analysis and Gene Set Enrichment Analysis using DESeq2 and ClusterProfiler.
- Visualized results using heatmaps and volcano plots, and effectively communicated findings to the supervisor.

RESEARCH PROJECTS

- Performing Genome Assembly, Transcriptome Assembly, Gene Annotation and Protein Function Prediction of *Escherichia coli* Genome using Bioinformatic pipeline.
- Phylogenetic trees construction for organisms chosen based on similarity of Protein to find conserved regions in gene sequences and to study evolution by constructing phylogenic trees using Bioinformatic tools.
- Isolation of Chitosan using shrimp shells using biological method.

CONFERENCE / RESEARCH

- **Subbaramireddy Remala,** Liming Liang, Amil M. Shah, Leo F. Buckley. "Genetic Mimics of GLP-1Ra and SGLT2i Therapy, Heart Failure and Chronic Kidney Disease Outcomes".
  Submitted to American Heart Association Scientific Sessions 2024.

LEADERSHIP SKILLS

Society of Manufacturing Engineers (SME-VIT)

Vice Chair-person Management ***May 2018 – May 2019***

VIT School of Biosciences and School of Technology

Program Representative ***July 2017 – April 2019***