Manojkumar Kumaran

Post-Doctoral Research Associate

PROFILE

Highly analytical and skilled bioinformatics researcher with a strong research background looking to conduct cutting edge post-doctoral work in the field of computational Neuroscience.

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https://mano2991.github.io/Mano2991/

PROFESSIONAL EXPERIENCE

Junior Research Fellow

Arvind Medical Research Foundation | Aug 2015 – Aug 2021

- Developed and benchmarked analytic tools and pipeline for Next Generation Sequencing (NGS) data.
- Used biostatics and bioinformatics algorithms to integrate multi-level of biological information with functional genomic data, for new hypothesis generation, variant identification and variant prioritization.
- Collaborated across multiple disciplines and contributed to various projects within the organization.

Data Scientist

INDX technologies, Mumbai | Aug, 2021 – Sep 2022

- Developed an automated tool for analysing the Whole Exome Sequencing (WES) data from cancer-specific patients data.
- Developed an automated tool for annotating the variants based on the available drug information.

Research Associate

CSIR - CCMB | Oct 2022 – Present

- Developed automated pipeline for analysing the single cell RNA, Single cell ATAC and Bulk ATAC sequencing data
- Developed an Machine learning model for mouse behavioural analysis

EDUCATION

M.Tech, Bioinformatics (Intragrated)

Bharathidasan University | 2009 – 2015

PhD, Bioinformatics

SASTRA University | 2015- 2022

KEY SKILLS

Bioinformatics Skills

- 10-year experience in **mammalian** genomics data analysis.
- Deep experience of standard **NGS bioinformatics toolsets** at the command line, which includes **gene expression analysis**, **Visualization of expression data, molecular pathway & network analysis, sequence annotation and variant prioritization** for NGS data**.**
- Having experience in Nucleic acid as well as protein **sequence and structural analysis.**
- Experience in **Machine learning model** for filtering and prioritization of pathogenic variants.

Programming Skills

- **R, Shell, Python** Scripting language for past 7 years and used them for developing tools in NGS data analysis
- Have more than 10 years of experience in **Windows, Unix/Linux, Mac OS environment**.
- Have 6-year experience in **system hardware, Networking and PC and serve**r admin at Aravind Medical Research Foundation.
- Strong experience in **MS-Office, Adobe photoshop, Illustrator and Lightroom**.

PUBLICATIONS

List of Publications

- **Kumaran, Manojkumar et al.** Performance assessment of variant calling pipeline using human whole exome sequencing and simulated data. BMC Bioinformatics (2019)
- Raj, Rajendran Kadarkarai , **Kumaran, Manojkumar et al.** Genetic characterization of Stargardt clinical cases. Eye and Vision (2020)
- **Kumaran, Manojkumar et al.** Whole-exome sequencing identifies multiple pathogenic variants. Indian Journal of Ophthalmology (2021)
- **Kumaran, Manojkumar et al**. Bioinformatics for Whole Exome Studies. Bioinformatics and Human Genomics Research (2021)
- **Kumaran, Manojkumar et al** . Clinical reassessments and whole-exome sequencing. Ophthalmic Genetics (2021)
- **Kumaran, M** *et al* eyeVarP: A computational frame work for identification of pathogenic variants specific to eye disease, Medical Genetics (2023)
- Shafi, Gowhar , **Kumaran, M** et al. Comprehensive ctDNA profiling reveals potential resistance mechanisms. Cancer Research (2024)
- Jeyaprakash, K., **Kumaran, M.,** *et al.* Investigating druggable kinases for targeted therapy in retinoblastoma. *J Hum Genet* (2024).
- **Kumaran, M** *et al*, Single-Nuclei Sequencing Reveals a Robust Corticospinal Response to Nearby Axotomy but Overall Insensitivity to Spinal Injury *j.neurosci* (2025)