

Manan Chopra

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UC San Diego M.S. graduate with 3 years of academic research experience in bioinformatics, specializing in the processing and analysis of NGS datasets. Strong communication with interdisciplinary teams due to previous experience with wet-lab portions of experiments. Passionate about uncovering biological stories and insights through data analysis.

EDUCATION

UC San Diego | La Jolla, CA

B.S. Biology w/ Specialization in Bioinformatics | Major GPA: 3.97

Sept. 2019 - June 2023

M.S. Biology (Focus in Bioinformatics) | GPA: 4.0

Sept. 2023 - Aug. 2024

Master's Thesis: *Validation of Human Retinal Organoid Derived Photoreceptors through Single-cell RNA Sequencing*

Relevant Coursework: Adv. Data Structures & Algorithms, Applied Genomic Technologies, Adv. Bioinformatics Lab, Molecular Sequence Analysis, Probability & Statistics for Bioinformatics, Biological Databases

SKILLS

General Skills: Programming, NGS/genomic data analysis, NGS library preparation, scientific writing

Technologies: Python/Jupyter Notebook, R/Rmd, WSL2/Linux, Javascript/React, Java, C/C++, WSL2, Bash, Git, Anaconda/Miniconda

Processing Tools: Galaxy, RASFlow, FastQC, TrimGalore, HISAT2, STAR/STARsolo, featureCounts, DESeq2

NGS Formats: Bulk RNAseq, Single-cell RNAseq (PIPseq), ATACseq, ChIPseq

NGS Analysis Stack: Excel, Scanpy, scvi-tools, pandas, seaborn, matplotlib, PyTorch, Seurat, ggplot2

EXPERIENCE

Wahlin Lab | Graduate Researcher, Undergraduate Research Assistant | La Jolla, California

June 2021 - Aug. 2024

- Developed and implemented bioinformatic workflows in Python and R for the processing, analysis and visualization of large NGS datasets on both Windows and Linux platforms
- Tailored workflows with different tools and data filtering strategies to analyze datasets with unique needs
- Carried out wet-lab portions of experiments (RNA isolation, NGS library prep, stem cell work) to generate data for bioinformatics analysis
- Co-authored multiple peer-reviewed research articles/reviews in reputable journals, demonstrating proficiency in scientific writing and creation of publication-quality figures
- Design original curriculum for education lab meetings with the purpose of teaching my peers relevant concepts in bioinformatics and data analysis for various ongoing projects
- Create and maintain WahlinLab GitHub repository with the goal of making code accessible to scientists with varying levels of experience in computational biology (<https://github.com/WahlinLab>)

UC San Diego | Teaching Assistant for Recombinant DNA Lab (BIMM101) | La Jolla, California

Jan 2024 - June 2024

PUBLICATIONS

- *Human Retinal Ganglion Cell Neurons Generated by Synchronous BMP inhibition and Transcription Factor Mediated Reprogramming*, npj Regenerative Medicine (<https://www.nature.com/articles/s41536-023-00327-x>)
- *Restoring vision and rebuilding the retina by Müller glial cell reprogramming*, Stem Cell Research, Dec 2022 (<https://www.sciencedirect.com/science/article/pii/S1873506122003555?via%3Dihub>)
- *Chromatin Accessibility and Transcriptional Differences in Human Stem Cell-Derived Early-Stage Retinal Organoids*, MDPI Cells, Nov 2022 (<https://www.mdpi.com/2073-4409/11/21/3412>)
- *Early Transcriptional Dynamics of Retinal Ganglion Cells Generated by Direct Conversion*, ARVO Research Conference Poster, April 2023 (<https://iovs.arvojournals.org/article.aspx?articleid=2786985>)