Digvijay Jani

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Education

University of California, San Diego | *La Jolla, CA*
Bachelor of Science in Chemical Engineering | *September 2018 - June 2022*

- Minors in Biology, Chemistry, and Data Science

Work Experience

UC San Diego: School of Medicine - Center for ALS Research & Therapy | *La Jolla, CA*
Research Assistant | *September 2020 - Present*

- Worked with Dr. John Ravits to identify mechanisms & therapeutic targets of neuronal degeneration in ALS, due to repeat expansions in C9orf72.
- Identify proteins binding to G_4C_2 & G_2C_4 repeat expansions in C9orf72 RNA transcripts of cells afflicted by ALS & determine full sequence and structure of repeat expansions.
- Implement various techniques to investigate appropriate targets for antisense oligonucleotide therapies.
- Performed lab chores and contributed to the design, execution, and interpretation of experiments.

UC San Diego: School of Medicine - Center for Neural Repair | *La Jolla, CA*
Research Assistant | *February 2020 - Present*

- Worked with Dr. Armin Blesch on identifying mechanisms influencing neuronal plasticity and regeneration in the mammalian nervous system.
- Implemented various techniques to investigate the potential role of neural stem cells and biomaterials in spinal cord regeneration.
- Assisted with projects addressing the structural changes associated with pain development after spinal cord injury.
- Validated findings in rodent models through gene therapy.

UC San Diego: National Center for Microscopy and Imaging Research | *La Jolla, CA*
Computational Neuroscience Intern | *August 2019 - Present*

- Computational neuroscience study in software development for large-scale biomedical image analysis.
- Implemented deep neural networks and image processing pipelines with regard to learning, memory, and inter-neuron communication.
- Developed a Python program to generate colored meshes from label volumes and isolate unique regions.

UC San Diego: School of Medicine - Altman Clinical & Translational Research Institute | *La Jolla, CA*
Undergraduate Research Assistant | *September 2019 - April 2020*

- Worked with Dr. Derek Welsbie on developing a neuroprotective strategy for glaucoma.
- Implemented various techniques to identify drug targets in primary mouse and stem cell-derived human retinal ganglion cells.
- Assisted with projects addressing the signaling pathway in retinal ganglion cell death.
- Validated findings in rodent models using gene therapy.
- Performed lab chores and helped with the design, performance, and interpretation of experiments.

Leadership

American Institute of Chemical Engineers | *La Jolla, CA*
Project Manager | *November 2020 - Present*

- Led a team of 7 undergraduate students to research methods of ethanol extraction, as an alternative to distillation.
- Analyzed the advantages and disadvantages of current industry practices regarding ethanol extraction.
- Taught students how to approach an academic research paper and prepare research proposals.

Research Engineer | *May 2020 - Present*

- Design and build a portable vertical axis wind turbine for on-campus implementation and local STEM outreach.
- Analyze data to determine optimal conditions and parameters for turbine function.

CyberPatriot National Youth Cyber Defense Competition | *Placentia, CA*
Volunteer Mentor | *November 2015 - June 2018*

- Specialized in Linux (Ubuntu & Debian) and Cisco Networking.
- Created practice virtual images for the students to hone their skills.
- Contributed to curriculum for securing Windows/Linux workstations/servers, laying foundation for multi-year national semifinalist ranking.
- Taught 70+ middle & high school students how to secure Windows and Linux servers, workstations, and services like Apache and DNS.
- Ranked in top 20 teams nationally and reached national semifinals competition 3 years in a row.

Skills

Techniques	Cell Culture, Confocal Microscopy, Genotyping, IF Staining, Immunoprecipitation, qRT-PCR, RNA-Seq, Western blot
Languages	Bash, C, C++, Python, Java (including Android), MATLAB, PowerShell, R
Tools/Frameworks	Amazon Web Services, CellProfiler, Fiji, Git, ImageStudio, LaTeX, Linux, Microsoft Office, RStudio, Zeiss ZEN