DIVYA DEODAS PRABHU

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EDUCATION

University of California, San Diego, USA **Sept 2023 – Present**
Master of Science in Bioengineering
Relevant Coursework: Biochemistry, Cell and Molecular Biology, Stem Cell Biology, Tissue and Cell Properties (Biomechanics), Patient-Centered Clinical Medicine for Bioengineers, Tissue Engineering and Regenerative Medicine

University of Mumbai, India **Aug 2016 – Oct 2020**
Bachelor of Engineering in Biomedical
Relevant Coursework: Signals and Control Systems, Medical Imaging, Hospital Management, Biomaterials, Advanced Image Processing

EXPERIENCE

Research Associate – Kravets Lab, University of California, San Diego, USA **Apr 2024 – Present**
- Pioneered research on beta-cell subpopulations in Type 2 Diabetes (T2D), employing FLIM, FRAP, and calcium imaging to assess pancreatic slices and islet function, revealing novel insights into glucose-stimulated insulin secretion and metabolic heterogeneity.
- Deciphered immunoendocrine interactions in Type 1 Diabetes (T1D) through network analysis and 4D confocal microscopy, identifying key molecular mechanisms driving disease progression and potential intervention targets.
- Designed and standardized experimental workflows for islet isolation, fluorescence microscopy, and calcium imaging, achieving high reproducibility across 20+ islets and 50+ pancreatic tissue slices in mouse models with cell-specific GCaMP6 expression.
- Developed a computational framework integrating advanced signal processing (FFT, Inverse FFT) in MATLAB and ImageJ, enabling quantitative calcium dynamics assessment and spatial correlation analysis using Imaris and GraphPad Prism, enhancing the precision of beta-cell function characterization.

Research Associate – Cheresh Lab, University of California, San Diego, USA **Jan 2024 – Mar 2024**
- Uncovered the role of LPAR4 and fibronectin in pancreatic tumor initiation and metastasis, utilizing flow cytometry, western blotting, and gel electrophoresis, leading to the identification of key molecular drivers of tumor progression.
- Engineered and executed targeted experiments integrating tumor and fibroblast co-culture systems, siRNA knockdowns, and immunofluorescence imaging, elucidating critical tumor–extracellular matrix interactions (ECM).
- Led in vivo investigations using mouse models, applying atomic force microscopy (AFM), immunohistochemistry (IHC), and western blot analysis to characterize cancer-associated fibroblast (CAF) influence on tumor microenvironments, contributing to potential therapeutic strategies in oncology research.

Product Manager – Krishagni Solutions Private Limited, Mumbai, India **Jul 2020 – Aug 2023**
- Spearheaded the development and deployment of 30+ automated workflows, optimizing biospecimen management, clinical research operations, and regulatory compliance for global life sciences institutions by 60%.
- Led and executed 20+ high-impact projects with top-tier research institutions, delivering customized software solutions for COVID-19, diabetes, breast cancer, and pancreatic tumor research, enhancing data integrity and research efficiency.
- Designed and integrated JIRA-based analytics dashboards, enabling real-time tracking of clinical and laboratory workflows, accelerating decision-making, improving workflow automation, and increasing biospecimen tracking efficiency by 75%.
- Conducted 50+ training and mentoring sessions, equipping researchers, clinicians, and junior staff with proficiency in REDCap, Epic, Cerner, and Hamilton BiOS, driving higher software adoption, regulatory adherence, and operational efficiency.

Research Intern – Center for Innovation and Bio-Design (CIBioD), Chandigarh, India **Jun 2020 – Jul 2020**
- Optimized manufacturing workflows for diabetes-related products, implementing three innovative solutions that enhanced production efficiency and product quality in a translational diabetes research project.
- Conducted research on Type 1 and Type 2 diabetes, analyzing neurological complications and metabolic dysfunction, contributing to novel insights in disease progression and management strategies.
- Led a cross-functional team to design and deploy a machine learning-based diabetes prediction platform, achieving a 48.97% improvement in diagnostic accuracy, enhancing early detection and patient risk stratification.

Biomedical Engineering Intern – Holy Family Hospital, Mumbai, India **Dec 2018 – Jan 2019**
- Partnered with senior engineers to troubleshoot, repair, and maintain critical medical devices across radiology, ICU, and surgical units, ensuring 100% compliance with GMP, FDA, and hospital safety regulations, directly enhancing patient care and operational efficiency.
- Led validation and fixture development projects for diagnostic imaging systems, ventilators, infusion pumps, and surgical tools, improving device reliability and performance for life-saving procedures.
- Executed hands-on troubleshooting and precision calibration of high-risk medical equipment, ensuring optimal functionality, safety adherence, and uninterrupted clinical operations.
- Applied LabVIEW, SolidWorks, and Minitab to conduct Design of Experiments (DOE), Measurement System Analysis (MSA), and technical documentation, driving data-backed optimizations in medical device performance and regulatory compliance.

SKILLS

- **Laboratory Techniques**: Flow Cytometry (FACS), ELISA, qPCR, RT-PCR, Western Blotting, Mammalian Cell Culture, Immunofluorescence, Live-cell Imaging, PBMC and Primary Cell Isolation, Islet Biology, NGS Assays, In Vivo Research, AFM, DNA and RNA Extraction, Plasmid Isolation, iPSC-Derived Models, Mouse Models, Aseptic Lab Techniques, IHC
- **Bioinformatics, Imaging and Computational Modeling**: FLIM, FRAP, Calcium Imaging, ImageJ, Imaris, MATLAB, Python, GraphPad Prism, Spatial Data Analysis, AutoCAD, SolidWorks, Blender, Leica LAS X, BioTek Cytation Imager, Minitab, SimBiology, FlowJo, Microsoft Office (Excel, Word, PowerPoint, Project- Advanced), DOE, MSA, Power BI, MySQL, FFT Analysis, LIMS, ELN, LabVIEW
- **Product and Workflow Management**: JIRA, Atlassian Suite (Confluence, Kanban Boards), Workflow Automation, GMP Compliance, FDA Standards, Agile Project Management, Regulatory Documentation, Clinical Research Operations, Google Suite