Ashish Jayamohan

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Summary:

- **Education:** B.S. Computer Science, University of California San Diego (Graduation Date: June 2025)
- **Skills:**
    - Analytics tools: Visual Basic for Applications, Excel, Powerpoint
    - Programming: Python, Java, SQL, R, C++, Azure, Git

Experience:

Intern, Surface Optics June 2023 - September 2023

- Was responsible for end-to-end execution of an optimization project – gathered consumer needs, understood system requirements, and defined a comprehensive engineering plan.
- Optimized devices for faster measurements and added support for new modes and formats of measurement.
- Modified a data prediction process to use 15% fewer points of measurement input, thus enabling high-precision prediction for more use cases. Changes resulted in similar time and cost reduction for the customer.
- Awarded 'Best Technical Skills' award out of 50 student interns from various companies at the UCSD Computer Science Engineering Internship Symposium.

Intern, SpendMend February 2021 - October 2023

- SpendMend works with hospitals to help them gain insight and visibility into their cost cycle to help them control costs, reduce risk, and fund patient care.
- Was a part time intern for two years on the engineering team, and worked to develop and maintain software that extracted information from medical invoices with minimal human intervention using OCR technology.
- Decreased number of outlier invoices flagged for human intervention by ~30%, saving company time.
- Introduced structured collaborative development practices, including integrating Git version control and establishing best practices for code reviews and deployments.
- Facilitated automated data extraction of over 700,000 invoices by the end of internship.

Student Researcher, UC San Diego April 2023 - *Present*

- **Yonder Dynamics** - Part of the UCSD team for the Mars University Rover Challenge. Conducted experiments for detection of life in Martian soil through wet lab fluorescence spectroscopy. Designed and implemented a low-cost compact spectrometry system for biosignature identification. Built robust software testing and baseline framework in Python for spectrometer integrated into Robot Operating System (ROS).
- **Boolean Lab** - Worked on developing a low-cost tiny machine learning (TinyML) optimized device to effectively diagnose specific diseases from cytometric data. Developed a machine learning tool using Keras RetinaNet, Tensorflow, and QuPath for quantitative organoid detection and analysis.
- **Halpain Lab** - Developing a computational tool in Python that automatically identifies and quantifies dendritic spines from fluorescent images. Worked on large-throughput image analysis pipelines for identifying neuronal cells from MAP1b fluorescent images in FIJI/ImageJ.
- **Dorrestein Lab** - Building software in Python to predict spectrometric entropy from Molecular Assembly (MA) index, as well as studying the correlation between MA index and tandem Mass Spectrometry (MS/MS) data for more efficient data clustering

Research Assistant, Children's Hospital Oakland Research Institute August 2020 - April 2023

- Worked at the UC San Francisco Medina Lab to study long-term effects of statin strains on individual patients using genomic analysis.
- Developed an novel internal tool in Python for fast phenotypic prediction, automating previously tedious tasks and saving 20+ work hours per analysis; Contributed to open-source genomic analysis projects (ANNOVAR, plink).

Coursework:

- **Computing:** Algorithms, Data Structures, Linear Algebra, Computability and Complexity, Systems Programming
- **Other:** Managing Diverse Teams, Personal Ethics at Work, Bioinformatics

Awards & Publications:

- **Top 10%**, Leetcode Contest Rating
- **5th Place**, UCSD CPC Programming Contest
- **10th Place**, UCSD WIC Programming Contest
- **Implementation and Assessment of Teamwork in Computer Science Education** - Jayamohan, Cheuoua (https://makecscount.com/Jayamohan2021.pdf) - 2021
- **Adding Zemax Transformation and Output Support for SOC-210** - Jayamohan (Technical Skills Award - UCSD CSE 197 Symposium) (https://ashishjayamohan.github.io/files/general/Jayamohan.Ashish.2023.pdf) - 2023
- **Wet Lab Fluorescence Spectroscopy for Detection of Life in Martian Soil** - Patil, Johnson, Jayamohan, O' Malley, Muruhuthasan (https://ashishjayamohan.github.io/files/general/poster.pdf) - 2023