

Ashish Jayamohan

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Summary:

- B.S. Computer Science, University of California San Diego (Graduation Date: June 2025)
- **Proficiency:** Java, SQL, Python, R, C++, Haskell, Azure, Git
- **Coursework:** Databases, Data Center Systems, Algorithms, Data Structures, Operating Systems, Linear Algebra, Computer Vision, Computer Architecture, Computability and Complexity, Systems Programming

Experience:

(Incoming) Software Development Engineering Intern, Amazon

June 2025 - September 2025

Software Engineering Intern, Startree

September 2024 - Present

- Developed rule-based performance advisor that recommends optimal indexing and settings for Pinot clusters based on extracted query features
- Top contributor on OSS Apache Pinot. Developed and enhanced query optimizers and implemented multiple transformation functions, including those for geospatial (H3) and JSON data..

Software Engineering Intern, Surface Optics

June 2024 - September 2024

- Developed an end-to-end application that allows reflectometer interoperability between FRED, Zemax, and BRDF coordinate systems
- Added new control functionality to SOC-210 bidirectional reflectometer for extremas, scatter (BSDF), and transmittance scenarios (BTDF)
- Enhanced Zemax-based interpolation to allow reflectometers to use fewer points of measurement

Software Engineering Intern, Surface Optics

June 2023 - September 2023

- 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 real time measurement observation
- Implemented Zemax transformation to use 15% fewer points of measurement input, 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

Software Engineering Intern, SpendMend

February 2021 - October 2023

- 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** - 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 software testing and baseline framework in Python for spectrometer integrated into 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

Projects:

- **Apache Pinot** (<https://github.com/apache/pinot/commits/master/?author=ashishjayamohan>)
- **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>)
- **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>)
- **Implementation and Assessment of Teamwork in Computer Science Education** - Jayamohan, Cheuoua (<https://makecount.com/Jayamohan2021.pdf>)