

# Pradyumna Sridhara

Email | Portfolio | Github | LinkedIn

## EDUCATION

### UNIVERSITY OF CALIFORNIA, SAN DIEGO

#### MS IN COMPUTER SCIENCE

March 2021 - June 2023 | La Jolla, California

#### Master's Thesis

Graduate Student Researcher, Machine Learning Systems with Prof. Arun Kumar

## EXPERIENCE

### RAKUTEN AMERICAS | BIG DATA AND CLOUD ENGINEERING INTERN

June 2021 - September 2021

- Designed a BigQuery solution to host and analyze data quality reports of the Rakuten Catalog Platform team. Integrated the BQ data with Google DataStudio to showcase visual trends. It has been deployed to production.

### CISCO SYSTEMS | SOFTWARE ENGINEER II

July 2018 - January 2021

- Worked on optimizing HPA in Kubernetes. Achieved better REST call failure rates in Cisco production environments using Liveness and Readiness Probes.
- Technical Lead** for a MeanStack solution delivering 560K+ historical contract images, invoices and orders to Cisco Partners. Deployed to production in 2020.
- Designed and delivered a zero-fault image migration system for 70K+ of **Cisco's highly critical networking firmware images**, playing a key role in all Cisco firmware image downloads. Deployed to production in 2019.

## RESEARCH AND PROJECTS

### CEREBRO- DISTRIBUTED MACHINE LEARNING | UC SAN DIEGO

January 2022 - Present

- Researching on model selection pipelines for distributed Machine Learning as a cloud-native offering using Kubernetes.
- Designed and built feature engineering pipelines using Dask, model training and test pipelines using the Model-Hopper Parallelism algorithm housed on multi-node multi-GPU clusters on the cloud.
- Working on integrating the pipeline in new DeepLearning labs running on Intel's Habana hardware, at the San Diego Supercomputer Center.

### LEARNING FROM MISTAKES - NEURAL ARCHITECTURE SEARCH

| UC SAN DIEGO

March 2021 - December 2021

- Formulated a multi-level optimization framework involving two sets of models that share a common learnable architecture. The first model learns, and the second model is trained by re-weighting the data samples based on the errors in the first model's predictions. The search space for the neural architecture is made continuous similar to prior work.
- This work was published in AAAI 2022.

### CENTER FOR CLOUD COMPUTING AND BIG DATA | PES

UNIVERSITY

July 2018

- Designed and developed *Bhodhisattva* - a tool for **rapid deployment of AI on containers**. Bodhisattva is a PaaS system developed from scratch, that offers **ML-as-a-Service** wherein users can incorporate Machine Learning capabilities to a web application, deploy and scale the application, all with zero written code.

### PES UNIVERSITY

#### B.TECH IN COMPUTER SCIENCE AND ENGINEERING

August 2018 | GPA: 8.61/10

## SKILLS

### PROGRAMMING

Python • Java • C/C++ • Golang  
• AngularJS • Shell Script

### TOOLS AND TECHNOLOGIES

Docker • Dask • Ray • PyTorch •  
BigQuery •  $\text{\LaTeX}$  • MySQL  
• MongoDB

### CLOUD SERVICES

Kubernetes • AWS • GCP • OpenShift •  
Grafana

## CERTIFICATIONS

**Certified Kubernetes Administrator (CKA) | 2020**

Cloud Native Computing Foundation

## COURSEWORK

*Data Systems for Machine Learning*  
*Cloud Computing*  
Parallel Computation  
Unsupervised Learning  
Recommender Systems and Web Mining  
Search and Optimization  
*Algorithms for Information Retrieval*

## PUBLICATIONS

- [1] "Learning from Mistakes - a Framework for Neural Architecture Search" (AAAI 2022)
- [2] "Bodhisattva - Rapid Deployment of AI on Containers" (IEEE CCEM 2018)
- [3] "A Microservices-Based Smart IoT Gateway System" (Springer SICA 2019)

## ACTIVITIES

- Volunteer with the Step-Up Foundation program to teach English to middle schoolers
- Certified Junior Level Carnatic Music Mridangam player, Karnataka Music Academy