

# Aryaman P. Singh

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## EDUCATION

UC San Diego, (grad. 2021)

**DEGREE:** B.S **MAJOR:** Applied Math

## RELEVANT COURSEWORK

- Data Structures & Object Oriented Design
- Math for Algorithms & Systems
- Combinatorics, Statistics, Data Analysis w/ R

## SKILLS

- **Programming** – Python, Java, C++, shell
- **Math** – R, Matlab, Pandas
- **Web** – JavaScript, HTML, CSS
- **Cloud** – Kubernetes, Docker, AWS, GCP
- **Frontend** – ReactJS, Redux
- **Backend** – Django, Flask, SQL

## WORK EXPERIENCE

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### Hadoolytics

April 2021 - Present

Software/DevOps Engineer

- Worked with a team that helped banks migrate their applications from legacy servers to Kubernetes clusters and maintain them.
- Worked on a Database Migration Tool aimed at helping clients migrate legacy on-premise databases to fully-managed cloud databases on AWS RDS.
  - Developed the migration tool for SQL Server migrations - involved writing scripts to discover and connect with on-prem environment, create backups of the required databases, store backups on an NFS mount, transfer backups to an S3 bucket using AWS DataSync, create client environment in RDS to mimic on-prem and restore backed up databases.
  - Significantly improved data transfer speeds using AWS DataSync instead of SQL Server built-in backup-to-S3/Azure options.
- Architected the backend of a Policy Management Tool for software deployed on Kubernetes clusters to ensure policy-compliance of deployments.
  - Set up a **binary authorization webhook** on the cluster, configured to query a custom **metadata API** to ensure vulnerability and attestation requirements are satisfied at deployment time.
  - Used the open source **Grafeas metadata API** to store vulnerability scan reports and attestation records for images to be deployed.
  - Set up a **Kubernetes CronJob** for continuous vulnerability scanning of the images pushed to pods to ensure real-time policy compliance.

## PERSONAL PROJECTS

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### Stat90

2020

*Visualization tool for soccer statistics.*

- Developed a React progressive web-app which uses **Chart.js** to provide an interactive visualization tool for soccer stats.
- Set up a weekly cron job which scrapes data using **Selenium**, stores it in a CSV and populates the **PostgreSQL** database.
- Set up a **Django REST API** to serve the data.

### IronLog

2020

*Fitness tracker to create and modify routines.*

- Progressive Web App implemented in React using **Redux** for state management and **Knox** for token authentication.
- Created a **Django** backend which utilizes many-to-many model relationships allowing users multiple start-points to their log and reducing database redundancy.