

Piyush Bag

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EDUCATION

Santa Clara University

Masters of Science in Computer Science, 3.85/4.00

Santa Clara, CA

Present - Mar 2023

Courses: Advanced Web Programming, Web Architecture and Protocols, Distributed Systems

University of Mumbai

Bachelors of Engineering in Information Technology, 7.05/10.00

Mumbai, India

Aug 2012 - May 2016

Courses: Data Structures and Algorithms, Relational Databases, Object Oriented Programming, Design Patterns

PROJECTS

Algorithmic Trading using Python

Oct 2020

Python, Jupyter, IEX Cloud data api, NumPy, Pandas, Requests, SciPy, XlsxWriter

- Developed an Equal-Weight S&P 500 Index Fund by importing the constituents, pulling data for the constituents and then calculating Weights printing it in an output file
- Built a Quantitative Momentum Investing Strategy selecting the stocks whose price appreciated the most during a period by considering the recent year, ignoring the most recent month etc.
- Implemented a Quantitative Value Investing Strategy merging mathematical analysis with the principles of value investing in order to avoid the noise of the market

gRPC based Golang Microservices

Feb 2021

Golang, gRPC, protobuf, TravisCI, Git

- Created server and client code in Golang using protocol compiler gRPC Plugin and compared gRPC and REST API paradigm
- Constructed massively parallel systems with Go's concurrency model using Go routines and channels
- Implemented Unary, Server Streaming, Client Streaming Bi-Directional Streaming API
- Built a fast scalable HTTP/2 API for a Golang micro service with gRPC, Protocol Buffers (protobuf)

EXPERIENCE

Tata Consultancy Services

Mumbai, India

Software Engineer

Dec 2016 - Mar 2021

Analytic and Insights Unit: TCS Next-Best-Action

Jul 2019 - Mar 2021

Full-Stack Web Developer

Python, Flask, Celery, Rabbit MQ, React.js, PostgreSQL

- Improved front-end designing functionalities led to code optimization by 20%; leveraged React.js and JavaScript
- Lead development of module to build the distributed architecture as per the client requirement and collaborated with experienced cross-disciplinary technology teams resulted in scale and speed up the Flask application by 25%
- Created Microservices and REST API utilizing Python to handle 10x inbound volume
- Developed a distributed Task Queue using Celery and Rabbit MQ to enable tasks in background while application continues to resolve other tasks

Retail Unit: TCS BaNCS Loan Origination System

Dec 2016 - Jul 2019

Back-end Developer

React.js, Express.js, MongoDB, Kubernetes, TravisCI, Jenkins, TDD, Typescript

- Developed and scaled a large, scalable E-Commerce app leveraging a collection of Microservices
- Solved concurrency issues in a distributed system environment and handled challenges in async, event-based communication between services
- Executed a custom event bus and documented and enforce structure constraints on events shared across microservices
- Redesigned a component tree that increased code reusability by 40%

TECHNICAL SKILLS

Languages: Python(Proficient), Go(Proficient), JavaScript, C/C++, SQL (Postgres),NoSQL (MongoDB), Java

Frameworks: React, Node.js, Flask, Bootstrap, FastAPI

Developer Tools and Other Technologies: Git, Kubernetes, TravisCI, Agile, (AWS) Amazon Web Services S3, Google Cloud Platform, VS Code, Visual Studio, PyCharm, IntelliJ

Libraries: Pandas, NumPy, SciPy, Matplotlib