Arshpreet Singh | Lead Engineer

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Avoiding complexity reduces bugs.

Presently working as Lead Software Engineer at ITC infotech with a leading team of 4 Engineers. Responsible for handling production issues and development of the Index-Distribution ecosystem. I am actively developing and maintaining internal Python and Golang-based distributed systems that are held responsible for index-creation, data-fanout, and portfolio-generation pipelines at Blackrock. I do actively participate in solution architecture and Cloud implementation of legacy systems.
I have 6+ years of experience as a Python developer, with expertise in Golang, Latex, C/C++, and Julia, and parallelization using MPI, Green-threads, and multiple techniques using Asynchronous programming models. I have also contributed to several Open-Source projects like Tux4Kids, Kivy, Open-Street Mappings, Pennylane(Quantum-Computing Framework) and Paraview(Scientific Data-Analysis Framework).

Employment Details

- **ITC Infotech** — **Remote Work**
  Lead Engineer, client: Blackrock — *April 2020–Current*
  - Asynchronous Applications Development using Python, Go-lang, Docker, and Kubernetes.
  - Responsible for onboarding vendor and custom indices onto customer proprietary end-to-end investment platform.
  - Developed and automated key business performance reports and dashboards for senior management discussion and business decision-making.
  - Develop and implement databases, data collection systems, data analytics, and other strategies that optimize statistical efficiency and quality.
  - Legacy code maintainer.
  - Development of Unit-Testing modules.

- **Maropost India**
  GoLang Developer, client: Multiple — *January 2019– April 2020*
  - Micro-Services Development and Deployment using Technology Stack: Go-lang, Protocol Buffers, Kafka, Docker, Kubernetes, and TimescaleDB.
  - Responsible for managing GCP and generic infrastructure for High Availability.
  - Replaced multiple RoR Services with GoLang to improve the efficiency of the Platform.
  - Solely responsible to implement containerization(Docker) for multiple project pipelines.

- **Netsmartz India**
  Senior Software Engineer — *August 2017–April 2018*
  - Development and Deployment of MicroServices using Technology Stack: Python, Flask, Docker, and MySQL.
  - Development of an in-house framework to achieve Periodic Automation Testing for the complete SDN platform.
  - Worked on BlockChain Project using Hyperledger to build network-packet pathways for transparent and secure loop.

- **Revinfotech Ludhiana**
  Full-Stack Python. Client: Bitfinex — *May 2016–August 2017*

- Design and development of Software Projects using Python, Django, Flask, MongoDB.
- Active participation with clients to understand business needs and Producing end to end Solutions.

Noteable Projects

- **Development of Index-Cache-Server using Golang**

  This project was required to cache a certain amount of Indices data to deliver over multiple clients and reduce request load on the database server.
- **MSCI data pipeline development**

  Developed index data-loader for MSCI(Morgan Stanley Capital International) to handle Quality-Check and Asset-Resolution for Index-vendors.
- **Development of distributed platform for Digital Marketing Analytics**

  Used Go-Programming language as Primary technology for the development of the platform based on MicroServices architecture to enhance the capabilities of legacy systems.
- **Neural Network based crypto trading bot**

  Bitcoin Live Trading is a Web-Based System developed using Django to generate Buy/Sell calls using Bitfinex and Coindesk APIs based on Predictive Results produced by Neural Network Algorithm.
- **ParaView Advanced Volume Filter(Scientific Data Analysis)**

  Advanced Volume Filter developed using Python as Scripting Language with support of other Libraries like Numpy, Scipy, and SymPy to filter different types of materials.

Education and Certifications

Academic Qualifications

- **GNDEC - Ludhiana, Punjab, India**
  B.Tech: Information Technology *2009–2013*

Certifications

- **IBM - Quantum Computing Foundations**
  https://bit.ly/3qunH5C *2020*
- **HackerRank - Rest APIs Development**
  https://www.hackerrank.com/certificates/b43d16c9c3c4, *2020*
- **Coursera - Julia for Scientific Programming**
  https://bit.ly/3A2QmTC, *2017*
- **Coursera - Deep Learning Specialization**
  https://bit.ly/2UAxHOx, *2017*
- **Pluralsight - Golang Fundamentals and Beyond**
  https://bit.ly/3xVYm6V, *2020*
- **Pluralsight - Working with Graph Algorithms in Python**
  https://bit.ly/2TbZ3dv, *2020*
- **Pluralsight - The Challenges of Quantum Computing**
  https://bit.ly/3jcrOS5, *2020*
- **Pluralsight - Applying Financial Risk-Modeling Techniques**
  https://bit.ly/3x1dpMx, *2020*
- **Pluralsight - Docker and Kubernetes**
  https://bit.ly/35Y7BaA, *2020*
- **Redhat - Fundamentals of Containers DO081X**
  https://www.redhat.com, *2020*

Open Source Contributions

- **Container-Orchestration of Quantum ML Framework**

  Development of Container-Orchestration for Pennylane to support multiple Quantum-interfaces with single space and one click installation for CPU and GPU devices.

- **Quantum Simulator development for Quantum-Computing Platform(Unitary Hack)**

  Participated in Unitary-Hack(https://unitaryfund.github.io/unitaryhack/) for the development of Quantum-Simulator for Pytorch. after this contrbution end-user will be able to perform Quantum-Operations on Quantum-Devices using Pytorch as backend.

- **Tuxblocks**

  Tux Paint and Tuxmath are free, award-winning programs for children ages 3 to 12 (for example, preschool and K-6). Tux Paint is used in schools around the world as a computer literacy drawing activity. It combines an easy-to-use interface, fun sound effects, and an encouraging cartoon mascot who guides children.

- **Open Street Mapping**

  OpenStreetMap is a map of the world, created by people and free to use under an open license. I Organized a "Mapping Party" as well as Workshop for School students to tech GPS-Tracking , Uploading and Creating maps using GPS trace. Completed Digital mapping of 20 villages of Punjab with help of school students.

- **Rock's Cluster Implementation(High Performance Computing)**

  Rocks is an open-source Linux cluster distribution that enables end users to easily build computational clusters, grid endpoints and visualization tiled-display walls.
  Built complete HPC(High Performance Computing)Cluster using 10 computers and HPC module was used to distribute jobs throughout the compute nodes.

- **LTSP(Linux Trminal Server Project) Implementation**

  The Linux Terminal Server Project adds thin client support to Linux servers. LTSP is a flexible, cost effective solution that is empowering schools, businesses, and organizations all over the world to easily install and deploy thin clients.
  My Project AIM was to setup Load-balancer, boot-server as well as application server. Boot server was responsible for providing Boot image to each client as well as helping to allocate it to Application Server.

Technical and Personal skills

- **Programming Languages:** Proficient in: Python, GoLang, Julia, LaTeX, SQL, Shell-Scripts.
  Also basic ability with: Assembly, Erlang, R.
- **Industry Software Skills:** MicroServices, Docker, Container-Orchestration, Cloud-Infrastructure, Data-Visulizations.
- **Other Software Skills:** Machine Learning and Data-Science, System-archetecture, DBMS.
- **General Business Skills:** Good presentation skills, Works well in a team.
- **Other:** Can write well organised and structured reports.