

Pulkit Piyush

<https://pulkitpiyush.github.io/>

Email: pulkit.piyush@gmail.com

Phone: +1-404-717-9967

EDUCATION

Georgia Institute of Technology

Masters in Computer Science

Atlanta, GA

Aug 2018 - Present

Indian Institute of Technology, Bombay

Bachelors in Computer Science and Engineering; CGPA 8.53/10

Mumbai, India

Jun 2010 - May 2014

EXPERIENCE

Goldman Sachs

Associate · Securities Division

Bangalore, India

Jan 2018 - July 2018

- **Full Stack Development** Java React JavaScript MongoDB : Implemented a sharded mongoDb backend for storing trading order information(about 5 million rows/day) and a react front end for displaying that information, using vertx as the web server.
- **Low Latency Trading Application** Java C++ : Reduced the network latency of exchange connectivity platform from 7 microseconds to 5 microseconds. Benchmarked the network latency of ultra high performance networking chips and associated drivers. Built the resiliency and fail over for a client facing node in a distributed architecture framework which implements the FIX protocol.

Goldman Sachs

Analyst · Securities Division

Bangalore, India

May 2016 - Dec 2017

- **Capacity Enhancements** C++ : Worked as a software developer and maintainer for Algorithmic Trading Platform, written as an API over proprietary language, implemented internally in C++. Fixed memory leaks in the system using valgrind/massif and reduced the memory consumption by 25%. Reduced the number of external market data events entering into the platform, by only sending the latest Quote price alongside with every Trade event, thus increasing the capacity of each engine by 50%.
- **Logging Enhancements** C++ : Moved logging from proprietary language to C++, making logging an order of magnitude faster.

Goldman Sachs

Technology Analyst · Technology Division

Bangalore, India

June 2014 - April 2016

- **FIX Protocol Application** C++ Ruby : Used POSIX shared memory APIs for IPC and select loop for file descriptors based event management, in a server application implementing FIX protocol. Built a connectivity layer for reference data service to a RabbitMQ message broker with protobuf wire format.
- **Chef as deployment manager** Ruby : Integrated Chef to be used as a configuration management and deployment tool for the entire stack of applications.

Goldman Sachs

Summer Intern · Securities Division

Bangalore, India

May 2013 - Jun 2013

- **Java to Proprietary language Integration** C++ Java : Implemented support for common building blocks of Algorithmic Trading Platform(written in proprietary language) to JVM based languages(java and scala). Implemented type marshalling of a generic datatype in proprietary language to JVM based languages. Used JNI(Java Native Interface), Method Reflection and Annotations in Java to facilitate calling methods of proprietary language from Java and vice-versa.

Claritics

Software Engineering Intern · UI Team

Pune, India

June 2014 - April 2016

- **Ruby on Rails Web UI** Ruby : Developed APIs in ruby on rails for Claritics Data Analytics Application, used in automatic creation of user accounts and automatic registration of user applications. Developed a ruby on rails application for showing graphs using High Charts, for top user applications of the month in terms of maximum data sent by the application. Developed the UI for showing notifications related to user applications depending on sudden changes in trends of real time data.

PROJECTS

WebQ | Bachelor's Project ^{C++} : Implemented a virtual queue to improve user experience during web server overload. It consists of two web proxies, that together simulate a virtual queue of web requests, and shape incoming load to match server capacity. The work was published as research paper in IEEE/ACM International Symposium on Quality of Service (IWQoS) at Portland,OR,June 2015.

Virtual Memory for OS161 ^C : Enhanced OS161 to support virtual memory with non-contiguous memory allocation, swap file facility, demand paging scheme and LRU replacement policy. Also designed and implemented VM manager and address space of process containing page table and swap file.

Control Flow Graph Language Processor ^{C++} : Created a compiler and interpreter for processing high level control flow graphs from GCC Supported arithmetic, conditional, intra-procedural control-flow statements and procedure calls.

PROGRAMMING SKILLS

Languages: C++ , C , Java , Python , JavaScript , Ruby , Bash/Ksh

Technologies: React , MongoDB , MySQL , Ruby on Rails , Kafka , RabbitMQ , Chef