Harshyt Goel

Web Infrastructure Engineer

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Summary

An experienced learner and programmer.

My approach to tackling new challenges and problems in general is to immerse myself in them, figure out the variables involved and iteratively build to a solution. I have applied this approach to macro facets of my life and to focused and granular problems in my profession.

I have 2 years of experience working extensively with Hack/PHP and with C++. I've listed the nature and details for these projects in my work experience descriptions.

Experience

Software Engineer at Facebook

October 2015 - August 2017 (1 year 11 months)

Built out the web infrastructure for several Facebook Messenger products. Major projects include:

- * Building a messenger thread/profile deep-linking framework for the m.me/{username} scheme with a suitable fallback mechanism on both Desktop and Mobile for messenger. This linking scheme is now used extensively by businesses for B2C communication with ~500 Million hits/Day.
- * Implementing cross platform C++ services which create/encode unique Messenger Codes (Messenger's QR code equivalent) for Users/Businesses and conversely scan/identify/decode the same. Also created relevant APIs and endpoints for the Mobile Clients along with the server caching/storage infrastructure.
- * Implemented a thorough system to check consistency of Messenger User Contacts across the stack that allows devs to track unexplained losses/additions of Contacts across the various backend layers to the client. This provides a robust backbone for future alerting and integrity fixer systems to be built on top of this.
- * Implemented comprehensive funnel logging for Messenger Search which allowed quantifiable search performance tracking. This data has allowed Messenger to goal against relevant metrics and significantly improve search performance leading to a decrease in failed searches by 3%.
- * Extensive work with creating/modifying/maintaining complex GraphQL + EntSchema(Facebook's internal object relationship mapping layer) architectures and provisioning a plethora of endpoints for clients.

* Revamped the Facebook Messages Inbox to resemble the Messenger.com interface.

Software Engineering Intern at Facebook

June 2014 - August 2014 (3 months)

Worked on the Ads Infrastructure team. Primarily worked on the caching product which loads all Ad units from local databases into Memcache.

- * My project involved implementing a major rewrite of the system to remove dependencies on Zookeeper and switch over to Tupperware. This allowed for major improvements in efficiency and concurrency across the product.
- * The subsequent parallelization of Ad unit loading tasks led to an average of 25% reduction of Total Time taken for a job across all Data Centers.
- * Switching the scheduling mechanism led to the reduction of On Run Delays by ~60%

Research Assistant at University of Bremen

May 2013 - June 2013 (2 months)

Worked on Model-based optimal multi-variable control and optimum controller parameterization for air systems of passenger car diesel engines.

- * Implemented the Mathematical Model of the Air system consisting of a system of ODE's in C++ by using suitable techniques for Discretization, Interpolation and Simulation.
- * Calculated an Optimal Control for the system using TransWORHP (In-House Toolbox) and achieved lower exhaust emissions without any significant drops in power.

Research Assistant at Indian School of Business

May 2012 - June 2012 (2 months)

Worked on an Operations Research problem focused on optimizing cab placements throughout a city for maximum revenue and minimum churn.

- * Developed a mathematical model to maximize the revenue using linear and non-linear objective functions by relocation of taxis based on predicted customer demand.
- * Achieved an increase in revenue up to 16% by the use of Queuing Theory (M/M/s/N models) to model loss of customers.

Education

Indian Institute of Technology, Kharagpur

Master of Science (M.Sc.), Mathematics and Computer Science, 2013 - 2015

Indian Institute of Technology, Kharagpur

Bachelor of Science (B.Sc.), Mathematics and Computer Science, 2010 - 2013

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Contact Harshyt on LinkedIn