# Sahil Gaba

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## SKILLS

**BACK END DEVELOPMENT|** Java • Python • Spring • Express • NodeJS
**DATA PIPELINES|** Amazon Redshift • Amazon EFS • S3
**MISCELLANEOUS|** Amazon AWS • Recommendations • Collaborative filtering •
Machine learning • MongoDB
**FRONT END DEVELOPMENT|** ReactJS • Redux • JavaScript • Bootstrap •
Materialize • HTML • CSS
**SOFT SKILLS|** Team player • Bias for action • Deliver results

## EXPERIENCE

**AMAZON | Java, Spring, Python, AWS, Machine Learning, Recommendations**
Software Engineer | Jul 2019 – Present, Seattle, WA
Amazon's Choice recommendations for incomplete missions
- Ideated and developed a new strategy to recommend Amazon's Choice items related to customer's incomplete missions
- Led technical architecture discussions with Amazon's Choice and Amazon API teams and designed user experience with Amazon Gateway team
- Built a data pipeline with Amazon Redshift and Amazon EFS to use offline data, thereby limiting traffic for Amazon's Choice service and eliminating scalability issues

Personalized recommendations with Topic Modeling
- Implemented a recommendation feature in Java using topics and incomplete missions of customers to improve recommendations on Amazon
- Built an extensible 'filters' module to remove Adult topics from final dataset

Complementary recommendations for Hardlines
- Ideated and developed a new algorithm using Collaborative Filtering to improve coverage of complementary recommendations for 500 million products on Amazon
- Created a data pipeline using Amazon EFS, Amazon Distributed Data Service and Amazon Distributed Job Service to create fresh dataset at regular intervals
- Implemented multiprocessing and LRU cache in Python to solve scalability challenges
- Conducted A/B tests and used Bayesian inference to launch the feature on Amazon

Mitigating the impact of Black Hole Effect on Recommendation Service
- Performed stress test on the service after artificially creating black hole effect. Black Hole Effect occurs when unhealthy host gets disproportionate share of requests because Load Balancer is configured to use least connections algorithm
- Alleviated the impact of black hole effect by adding time delay to error responses

*Experiments altogether generated more than $X million incremental revenue for Amazon and played a pivotal role in achieving annual team goal*

**FINTECH CORPORATION**
Software Engineer | Jan 2017 – Jun 2019, Chicago, IL
- Implemented API for custom order management and execution
- Developed and tested regional solutions tailored for stock exchanges of Americas

## EDUCATION

**UNIVERSITY OF ILLINOIS – URBANA CHAMPAIGN (UIUC)**
M.S., Mechanical Engineering
Dec 2016 | Urbana-Champaign, IL
GPA: 3.74/4

**INDIAN INSTITUTE OF TECHNOLOGY DELHI (IITD)**
B.S., Mechanical Engineering
May 2014 | New Delhi, India
GPA: 8.98/10

## HONORS & AWARDS

**CHARPAK SCHOLARSHIP |** For top 35 exchange students from India| French Embassy | 2012 | New Delhi

**DIRECTORS MERIT AWARD |** For top 7 percent students in the class | IIT Delhi | 2011 | New Delhi

**K. VASUDEVAN AWARD |** For topping the institute among 850 students| IIT Delhi | 2011 | New Delhi

## COURSEWORK

Data Structures and Algorithms
Developing Android Apps
Machine Learning
Data Mining
Applied Statistics
Linear Algebra
Differential Equations
Robotics: Mechanical Design

## INTERESTS

Traveling • Fitness • Nutrition • Food • Self-improvement