# PRABHJOT SINGH

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Scholar singhprabh

## ACADEMICS

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| Master of Science | Software Engineering and Development Management<br>***Carnegie Mellon University*, Pittsburg, US** |
| Bachelor of Technology | Instrumentation and Control Engineering<br>***Dr. B.R. Ambedkar National Institute of Technology*, Jalandhar, India** |
| Certificate Courses | • Innovation and Entrepreneurship, ***Stanford*, CA, US**<br>• Natural Language Processing with Deep Learning, ***Stanford*, CA, US**<br>• Management Essentials, ***Harvard Business School*, *Boston, MA, US***<br>• Introduction to High-Tech Product Management, ***UC Berkley, CA, US*** |

## WORK EXPERIENCE

**Principal Software Engineer** **Salesforce Inc., San Francisco, US** **2013-Current**

*Technologies*: Docker, Swarm, Kubernetes, Kafka, Solr, Pitney Bowes, Couchbase, Hbase, Spring, Spark, Yarn, ECS, IAM, Rest API, MySql, Splunk, GIT, Jenkins, HTML5, JAVA, Apex

- Co-leading design, architecture, and development across multiple teams in 5 time-zones for Revenue Cloud, a $600 million+ product line.
- Leading Architecture for Gartner Magic Quandrant Leader in CPQ and Billing, Lightning Data, and Data.com.
- Led the development team for Data.com and Lightning Data - a product line building a scalable, secure cloud and efficient data ingestion and serving platform to unite best of data vendors for Salesforce.com.
- Solely responsible for the technology-vision, strategy and cost management for the Lightning Data and Data.com product lines worth revenue of more than $18 million.
- Responsible for architecture and delivery of Einstein Pricing, and Einstein Collections for both existing and upcoming solutions.
- Working with engineering leaders and software architects on delivering highly scalable and secure SaaS solutions.
- Conducted and performed architecture and design reviews for multiple products to provide strong architectural support.
- Worked with third party partners/vendors to ensure architecture and integration alignment.
- Spearheaded design and enhancements for Revenue Recognition, Credits, Invoicing, Instrumentation for Salesforce QTC.
- Spearheaded the decommissioning of datacenters for first party datacenter to AWS migration for Lightning Data Exchange platform.
- Architected or designed multi-AZ distributed architecture in AWS. Designed fault tolerant multi-region distributed system and Zero downtime strategy for cloud.
- Analyzed and enhanced performance of both QTC and Lightning Data products at various levels.
- Designed and developed metadata driven Third Party API integration, authentication mechanism, request generators and response parsers.
- Lead machine learning based adaptive indexing and matching engine.
- Developed APEX package for data assessment.

- Worked with business partners in increasing throughput capacity from 10K request/hr to 1 million request/hr. Increased throughput enable customers to clean data in 5X less time, and helped sales to generate additional 15% revenue/year.
- Designed and developed automated solution to monitor complete infrastructure uptime parameters.
- Implemented log based alerting mechanism, traffic distribution dashboards, and production validation scripts. Automated system reduced deployment time from 3hrs to 15mins, bumped uptime to 99.994%, and reduced team's engineering effort by 6% per year.

**Tata Consultancy Services** **Assistant Systems Engineer** **Feb 2012 – July 2012**

*Technologies: Eclipse, Java*

- Developed an agile process management tool-Kanban Board that helped client in analyzing bottlenecks and reaching market swiftly.
- Led a team of six trainees for development of Telecom Store Inventory product, and won the first prize out of 10 teams

**Sensifi Inc.** **Software Engineer** **Aug 2010 – May 2011**

*Technologies: XCode, Objective C, Heroku*

- Designed, developed and published a RSS comic strip aggregator app, Comimix, on Apple app Store. App got featured at numerous websites as "app of the day" with total downloads crossing ~10K mark.
- Performed market research, idea validation and gathered feedback in terms of usability. Incorporated the feedback like date/time filters, custom website addition for enhanced user experience.
- Analyzed usage patterns, and pivoted our revenue model from paid app to advertisement revenue. This bumped up app's revenue to 1.6X.
- Implemented features like asynchronous download and multithreading for stream-less swiping. • Integrated social handles for quick sharing and social marketing.

## AWARDS

1. *President Award* winner at Salesforce
2. *Best Technical Talent* award winner at TCS ILP.
3. *Star of the Group* award winner TCS ILP

## PATENTS

1. Integrating Third-Party Vendors' APIs (Patent # 10,616,352)
2. Managing Authorization Tokens for Calling Third-Party Vendors (Patent # 10,616,230)
3. Cache Optimization for Missing Data (Patent # 10,909,118)
4. Managing Access Credentials for a Service Provider (Patent # 11,089,026)
5. Cross Account Access for a Virtual Personal Assistant via Voice Printing (Patent # 10,971,159)
6. Clock-Synced Transient Encryption (Application # US 16/530773)
7. Using Cache Objects to Store Events for adding corresponding objects in a Blockchain (Application # 16/776424)
8. Transaction System having a Serverless Architecture that provides Multi-Language Multi-Platform Transaction support for Multiple Vendors in conjunction with a cloud-based computing platform (Application # 16/774411)

9. Methods and apparatuses for temporary session authentication and governor limits management (Application # 16/949292)
10. Optimizing transaction times in distributed databases (Application # 17/306,560)
11. Self-Healing Build Pipelines for An Application Build Process Across Distributed Computer Platforms (Application # 17/507,652)

## EXPERT TALKS

1. *Managing Android devices* (EMM) at Android Fragmented Podcast
2. *Emerging trends in Cloud Computing* at Second International Conference on Trends in Science, Engineering & Management
3. *Upcoming technologies in IoT and Cloud Computing* in the Faculty Development Programme (FDP) on "Wireless Sensor Networks and IoT" sponsored by AICTE Training And Learning (ATAL) Academy

## JOURNAL PUBLICATIONS

1. Kaur, G., Srivastava, D., Singh, P., & Parasher, Y. (2019). Development of a novel hybrid PDM/OFDM technique for FSO system and its performance analysis. Optics & Laser Technology, 109, 256-262. *https://doi.org/10.1016/j.optlastec.2018.08.008 (SCI Publication)*
2. Srivastava, A., Kaur, G., Singh, P & Parasher, Y (2021) Machine learning based Predictive Modelling for failure management of Optical Spatial Mode Division Multiplexing System. International Journal of Communication Systems. IJCS-21-0111 (Accepted) (*SCI Publication*)
3. Singh, P. , Kaur, J., Dixit, V., Srivastava, A (2021) Development of Two-factor Authentication to Mitigate Phishing Attack. IEEE Access Access-2021-40716 (Communicated) (*SCI Publication*)
4. Srivastava, D., Kaur, G., & Singh, P. (2019). Design of novel hybrid WDM/multiple-beam FSO system to improve the link length in rainy season. Journal of Optics, 48(2), 184-188. https://link.springer.com/article/10.1007%2Fs12596-019-00534-0 (*SCOPUS Publication*)
5. Kaur, G., Rani, N., Parasher, Y., & Singh, P. Design and Implementation of Electro-Optic 2× 2 Switch and Optical Gates using MZI. Journal of Optical Communications. https://www.degruyter.com/document/doi/10.1515/joc-2017-0198/html (*SCOPUS Publication*)
6. Kaur, G., Kumar, A., Parasher, Y., & Singh, P. Design of Multichannel Optical OFDM System Using Advanced Modulation Techniques. Journal of Optical Communications. https://doi.org/10.1515/joc-2018-0062 (*SCOPUS Publication*)
7. Yadav, V., Tomar, P., Singh, P., & Kaur, G. (2020). Improvement in XML Keyword Search and Ranking for Data Analytics. In Smart Systems and IoT: Innovations in Computing (pp. 339-349). Springer, Singapore. https://link.springer.com/chapter/10.1007/978-981-13-8406-6_33
8. Narang, S., & Singh, P. Comparison of Results of PID and Fuzzy Control of Two Linked Rigid Manipulator https://www.ijsr.net/archive/v3i5/MDIwMTMxNzkw.pdf

## BOOK CHAPTERS

1. Singh, P., Dixit, V., & Kaur, J. (2019). Green Healthcare for Smart Cities. Green and Smart Technologies for Smart Cities, 91-130.
2. Parasher, Y., Singh, P., & Kaur, G. (2019). Green Smart Town Planning. Green and Smart Technologies for Smart Cities, 19.
3. Parasher, Y., Singh, P., & Kaur, G. (2019). Green Smart Security System. Green and Smart Technologies for Smart Cities, 165-184.

4. Tomar, P., Kaur, G., & Singh, P. (2018). A prototype of IoT-based real time smart street parking system for smart cities. In Internet of Things and Big Data Analytics Toward Next-Generation Intelligence (pp. 243-263). Springer, Cham.
5. Kaur, G., Tomar, P., & Singh, P. (2018). Design of cloud-based green IoT architecture for smart cities. In Internet of Things and Big Data Analytics Toward Next-Generation Intelligence (pp. 315-333). Springer, Cham.
6. Parasher, Y., Kedia, D., & Singh, P. (2018). Examining Current Standards for Cloud Computing and IoT. In Examining Cloud Computing Technologies Through the Internet of Things (pp. 116-124). IGI Global.
7. Kumari, S., Parasher, Y., Mehra, S., & Singh, P. (2021). Digitization in Agriculture: Insight Into the Networked World. In Artificial Intelligence and IoT-Based Technologies for Sustainable Farming and Smart Agriculture (pp. 1-24). IGI Global
8. Rani, R., Kaur, G., & Singh, P. (2021). Smart Soil Monitoring System for Smart Agriculture. In Artificial Intelligence and IoT-Based Technologies for Sustainable Farming and Smart Agriculture (pp. 213-229). IGI Global
9. Pahuja, S., Singh, G., & Singh, P. (2021). Real-Time Crop Monitoring in Agriculture. In Artificial Intelligence and IoT-Based Technologies for Sustainable Farming and Smart Agriculture (pp. 230-242). IGI Global

## CONFERENCES

1. Parasher, Y., Kaushik, A., Kaur, G., & Singh, P. (2018, November). Modelling of structural and material parameters of optical planar waveguide to control birefringence. In Latin America Optics and Photonics Conference (pp. Th4A-36). Optical Society of America.
2. Kaur, G., Dhamania, M., Tomar, P., & Singh, P. (2018, January). Efficient Integration of High-Order Models Using an FDTD–TDMA Method for Error Minimization. In International Conference on Communications and Cyber Physical Engineering 2018 (pp. 311-323). Springer, Singapore.
3. Singh, P., Tomar, P., Kaur, G. and Goel, S. K. (2017), "Reusability Estimation Model for Component-Based Software using Fuzzy Logic", 2017 MTMI International Conference on Emerging Issue in Business, Technology and Applied Science, Dubai, UAE, (Paper Accepted).
4. Kaur, G., Tomar, P., Agrawal, A., & Singh, P. (2020). Attacks and Their Solution at Data Link Layer in Cognitive Radio Networks. In Smart Systems and IoT: Innovations in Computing (pp. 351-361). Springer, Singapore
5. Tomar, P.; Singh, P. Kaur, G. and Sharma, S. (2016). "Maintainability of Software by using Computational Intelligence from Software Erosion", Journal of Global Information Technology, Pub: MTMI, USA, ISSN 1931-8162, Vol. 11, No. 1, pp. 23-36 (Indexed : UGC)

## CONFERENCE CHAIR

1. MTMI International Conference, 2017
2. 1st Online International Conference on Rebuilding Bharat With Artificial Intelligence Interventions After Covid-19 Pandemic: Opportunity And Challenges, 2020
3. MTMI International Conference, 2019
4. Second International Conference on Trends in Science, Engineering & Management" ICTSEM'21

## REVIEWER

1. IEEE Internet of Things Journal — Since 2019
2. Recent Advances in Computer Science and Communications Journal — Since 2020

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| 3. | Recent Patents on Computer Science Journal | Since 2019 |
| 4. | Springer Conference: Artificial Intelligence and Sustainable Computing for Smart City | 2021 |
| 5. | Artificial Intelligence and Sustainable Computing for Smart Cities (AIS2C2) Conference, Springer | 2021 |
| 6. | CRC Books Proposals and Book Chapters | 2020 |
| 7. | IGI Book Chapters | Since 2018 |
| 8. | Salesforce Design and Architecture | Since 2020 |
| 9. | Salesforce Long Range Plan | Since 2021 |
| 10. | Editorial Advisory Board, *Integration and Implementation of the Internet of Things through cloud computing*, IGI Global Publisher | 2021 |
| 11. | Journal of Healthcare Engineering | 2022 |
| 12. | Journal of Computational Intelligence and Neuroscience | 2022 |

## OTHER CERTIFICATIONS

1. AWS Certified Solutions Architect – Associate
2. AWS Certified Developer – Associate
3. Certified Scrum Master
4. Pragmatic Marketing, Level VI Product Management Certification
5. Splunk Certified Power User
6. Splunk Certified Knowledge Manager V.6