

Pritish Mishra

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Professional Experience

Developer

June 2019 - till date

SAP Mobile Services, SAP Labs

Product: Snowblind - SDK Library for design of cross-platform applications.

- Developed Just-in-time loading feature for List-pickers control in Android/iOS SDK
- Designed support for Analytics Chart and HTTP Image URL Rendering for Android/iOS SDK
- Implemented UI design of various controls in Android/iOS SDK as per Global Design spec
- Acting as Security Lead for all applications deployed for Mobile (iOS/Android)
- Performed penetration testing, threat modelling, i/o operations for application security

Modules: iOS SDK, Android SDK, NativeScript.

Languages: TypeScript, Java, Swift/Objective C.

Developer

Aug 2016 - May 2019

SAP Cloud Platform, SAP Labs

- Designed and Developed Multi-AZ HA and ZDM functionality for the cluster-based service-fabrik broker deployment for multiple IaaS like AWS, GCP, Azure and Openstack.
- Made Service-Fabrik broker and all associated components to be compatible with open-source Bosh 2.0 specifications.
- Implemented Point-in-time Recovery Feature for Service-Fabrik Backup Restore Library and facilitated the support for other backing services like PostgreSQL, MongoDB and Redis.
- Designed a framework to reduce the Restore Turnaround Duration for backing services in-order to comply to better RTO SLAs.
- Designed and developed a turbulence framework to ensure the resilience of all Service-Fabrik components against potential disasters like Network Failure, Disk Failure, AZ Failure, etc.
- Implemented all requisite changes to ensure support for Azure GA of Service-fabrik Broker and associated backing service offerings.
- Enabled support for Private-Cloud Delivery of SAP PaaS offering along with Service-Fabrik broker.
- Implemented Monitoring & Alerting for Service-Fabrik broker (a service broker) and all the services managed by the broker (Postgresql, Redis, MongoDB, RabbitMQ) as part of SAP Cloud Platform.
- Implemented Monitoring & Alerting for Bosh/Docker based instances for all services provisioned via SAP Cloud Platform.
- Designed and developed CloudFoundry-based CLI plugin to create/manage backup and restore for backing services like PostgreSQL, Redis and MongoDB. The project is now Cloudfoundry-incubated.
Github Repo: <https://github.com/cloudfoundry-incubator/service-fabrik-cli-plugin>
The plugin is available on public platform at: <https://tools.hana.ondemand.com/#cloud>
- Contributed to the Backup and Restore library of Service-Fabrik broker.
Github Repo: <https://github.com/cloudfoundry-incubator/service-fabrik-backup-restore>

Product: Service-Fabrik broker

This is an open-source Cloudfoundry-incubated project, available at: <https://github.com/cloudfoundry-incubator/service-fabrik-broker>

Modules: CloudFoundry CLI, Grafana, Riemann, InfluxDb, Docker, Bosh.

Technology & Tools Used: Go, Node.js, Python, Closure, Bash.

IaaS: AWS, OpenStack, Microsoft Azure, Google Cloud Platform, Alibaba Cloud.

Environment: Linux/MacOSX

Entrepreneurial Experience

Co-founder

June 2019 - till date

Hubris by SAP

- Productisation of recommendation service for making databases and applications autonomous
- Designed and developed the MVP of the product
- Deployed pilots for popular databases like PostgreSQL, MySQL, AWS RDS and GCP CloudSQL
- Designed the business model, revenue projections, marketing models, FTE resource allocations, etc.
- Acquired a customer group of 1 Large Enterprise and 5 Small Enterprises.
- Presented the idea in the Innvent Startup Challenge 2019, adjudged as the best startup idea in the event
- Presented the incubation of idea in SAP Accelerator, Potsdam/Berlin, 2019
- Presented the idea to SAP Executive Board in Los Angeles for seeking seed funding
- Winner of SAP Stellar Award for Nascent Entrepreneurship 2019 for contributions to Hubris

Awards & Achievements

- Winner of SAP Stellar Award for Nascent Entrepreneurship, 2019
- 4 times winner of SLI Quarterly Innovation Award, SAP Labs for Q2, Q4 2018 and Q1, Q2 2019.
- Winner of SAP Innvent Startup Challenge, 2019.

Peer-Reviewed Publications

Sahoo K.S., **Mishra P.**, Tiwary. M, Ramasubbareddy S., Baluswamy B., Gandomi A.H. (2019), "**Improving End-Users Utility in Software-Defined Wide Area Network Systems**" in IEEE Transactions on Network and Service Management, Nov-Dec 2019, (Available at Early Access Issue)

Mishra P., Puthal D., Tiwary M., Mohanty S.P. (2019), "**Software Defined IoT Systems: Properties, State-of-the-art and Future Research**" in IEEE Wireless Communication Magazine, Special Issue for Future Communication Trends towards Internet of Things Services and Applications, (Accepted and To be published in December Issue)

Mishra P., Tiwary M., Yang L.T., Puthal D. (2018). "**S2R: Service trading based response time optimization in mobile edge computing**" In 16th IEEE International Symposium on Parallel and Distributed Processing with Applications (ISPA 2018), 2018/12/11, pp 684-691

Tiwary M., Sharma S., **Mishra P.**, Elsayed H., Prasad M., Puthal D. (2018), "**Building Scalable Mobile Edge Computing by Enhancing Quality of Services**", 13th International Conference on Innovations in Information Technology (IEEE IIT'18), 2018/11/18, pp 141-146

Tiwary M., **Mishra P.**, Obaidat M.S., Puthal D. (2018), "**ISE: An Intelligent and Efficient Steganalysis Engine for Image Database in Big Data Systems**", Azerbaijan Journal of High Performance Computing, Vol 1, Issue 1, 2018, pp. 42-50

Peer Review Summary

Publons Reviewer Profile: <https://publons.com/a/3011133>

Performed peer-reviews for journals and conferences including:

- International Conference on Information Technology (ICIT)
- IEEE Wireless Communications
- IEEE Consumer Electronics Magazine
- International Journal of Communication Systems
- KSII Transactions on Internet and Information Systems

Patents

Pritish Mishra, Shashank Mohan Jain, Mayank Tiwary (2019), "Connectivity Interfaces Optimization Recommendation Engine for Enterprise IT Systems", Application No. 16/662,267

Pritish Mishra, Mayank Tiwary, Kirti Sinha, Saurav Mondal, (2019), "Workload mapping for tuning backing services in cloud", Application No. 16/659,380

Pritish Mishra, Shashank Mohan Jain, Mayank Tiwary (2019), "Function execution based on data locality/gravity", Application No. 16/661,016

Pritish Mishra, Shashank Mohan Jain, Mayank Tiwary (2019), "Peer to Peer architecture for Platform as a Service Offering: A web-assembly based execution framework"

Pritish Mishra, Shashank Mohan Jain, Mayank Tiwary, Meenakshi Sundaram P (2019), "Multi-Tenanted web-assembly framework for Integration"

Pritish Mishra, Shashank Mohan Jain, Mayank Tiwary (2019), "JIT as a Service over Field Programmable Gate Arrays: Accelerating Java Runtime Compilations for PaaS"

Pritish Mishra, Shashank Mohan Jain, Mayank Tiwary (2019), "Zero-trust model security for cloud-native traffic flows for Kubernetes/CloudFoundry"

Pritish Mishra, Shashank Mohan Jain, Mayank Tiwary (2019), "User Space Function Virtualization"

Pritish Mishra, Mayank Tiwary, (2018), "Provisioner Disaster-Recovery Framework for Platform-as-a-Service (PaaS) offering", Application No. 16/208,818

Pritish Mishra, Mayank Tiwary, (2018), "Cloud Resource Scaling Using Programmable-Network Traffic Statistics", Application No. 16/372,711

Pritish Mishra, Shashank Mohan Jain, Mayank Tiwary, Meenakshi Sundaram P, (2018), "Generic DB Tuner as a Service", Application No. 16/351,737

Pritish Mishra, Shashank Mohan Jain, Mayank Tiwary, Meenakshi Sundaram P (2018), "Performance Throttling Identification Service for Autonomous Databases"

Industrial Conferences

- "A Poor-man Serverless framework for cloud-based applications using web-assembly", presented at **CloudFoundry Summit Europe 2019** and **OpenSource Summit Japan 2019**.
- Presented HA and ZDM functionalities of Service-Fabrik broker at the **Cloud Foundry Community Advisory Board (CF CAB) Monthly Meeting**, <https://www.altoros.com/blog/cloud-foundry-advisory-board-meeting-july-2018-intro-to-shield/>
- Demonstrated HA and ZDM functionalities of Service-Fabrik broker at **SAP Developer Kick-Off Meeting (SAP DKOM), 2019**

Research Projects

Autonomous Database Services on SAP Cloud Platform

- Evaluation of Ottertune project for automated logical tuning of large-scale databases like PostgreSQL
- Developed the ML model based on Bayesian Optimisation leveraging real-time experiences
- Designed a prototype for tuning of multiple-databases like PostgreSQL, MySQL, SAP HANA and AWS RDS
- Identified the bottlenecks in performance of the Autonomous Services architecture.
- Designed and implemented a framework to run the Autonomous Services as part of SAP Cloud Platform micro-services offering
- Developed a throttling-detection architecture to make the Autonomous Services scalable and robust for a Multi-Cloud PaaS Architecture
- Designed framework for tuning of applications running on Java platform
- Filed 3 patents on the topic
- Preparing for a communication to VLDB conference

Internship

Summer Intern

7 May 2015 - 31 July 2015

Dell International

Product: Enterprise Business Intelligence

Project: Stewarded Reference Table 2.0

Brief Details: A self-service ETL portal which extracts and modifies (if required) data of a flat delimited file and pushes the data extracted into the Teradata database. This tool caters to over 1500 users of the enterprise.

Summer Intern

1 May 2014 - 30 June 2014

IIT Bhubaneswar

Supervisor: Dr. D.P.Dogra, Asst. Prof., Electrical Sciences

Project: Electronic Door Surveillance.

Brief Details: A product which records and displays the details of the persons who visited the client in his absence.

Undergraduate Project

A Hybrid Distributed Collaborative Filtering Recommender Engine Using Apache Spark

Keywords: Recommendation System, Big Data Tools, Apache Spark, Collaborative Filtering, Machine Learning, K-means Clustering.

Brief Details: The aim of the paper is to design a movie-recommendation engine using an algorithm which overcomes many disadvantages put forward by the prevalent techniques. The paper tries to leverage the benefits of big data tools and clustering techniques in-order to improve the throughput and maintain scalability of the engine.

Education

Bachelor of Technology (BTech), Dept. Of Computer Science

2012 - 2016

International Institute of Information Technology (IIIT), Bhubaneswar

CGPA - 8.96

Higher Secondary

2010 - 2012

D.A.V. Public School, Cuttack

89.0%

Secondary

2009 - 2010

D.A.V. Public School, Cuttack

CGPA - 10.0

Declaration

I solemnly declare that all the all the above information is correct to the best of my knowledge and belief.

Pritish Mishra