

RUPALI BHATNAGAR

SENIOR SOFTWARE ENGINEER

WORK EXPERIENCE

Servicenow	Sr. Software Engineer (Security Operations)	Apr'19-
As an individual contributor, worked with the team to develop the following high value features using Servicenow® platform:		
• Dynamic Approval Rule Engine for Vulnerability Exceptions - Designed and implemented a multi-level, dynamic approval rule engine using ServiceNow Flow Designer supporting deferment and exception requests. Enhanced the vulnerability remediation process by reducing approval time by 40% .		
• Penetration Testing Request Catalog & Workflow Automation - Developed and automated workflows for managing penetration testing requests, reducing manual intervention by more than 30% and streamlining the vulnerability management lifecycle across 50+ subsystems .		
• Background Job Processing Framework - Architected and developed a robust threaded background job processing framework to handle long-running tasks that previously strained system resources. Enabled easy migration through a user-friendly configuration interface. Features included:		
○ Multithreaded execution for improved performance, achieved efficacy of 60% in some use cases		
○ Job status tracking and cancellation support, leading to 100% visibility on the executing and errored out tasks .		
○ This framework significantly enhanced system stability and scalability for resource-intensive operations.		
• Real-Time Data Aggregation Engine for Dashboards - Built a high-performance aggregation framework for near real-time analytics of large-volume data. This engine powers key internal dashboards by enabling multi-dimensional analysis and timely data visualization, supporting critical decision-making and visibility. Used for generating metrics over 100k+ records in an 8hour timeframe .		
• Assignment Rule Engine for Vulnerability Remediation - Designed and implemented a robust, cache-optimized assignment rule engine to automatically prioritize infrastructure vulnerabilities and policy violations. This engine ensured accurate routing to appropriate remediation groups and is leveraged daily by ITIL users. On a daily basis , it can handle 1M vulnerable items .		
• Machine Learning-Based Assignment Recommendations - Developed a classification-based recommendation system for assignment suggestions using classification framework. 20% increase in task allocation accuracy and reducing manual assignment effort.		
• CISO & Vulnerability Dashboards - Led the design and development of the CISO dashboard and supporting vulnerability dashboards to visualize statistics on high-risk vulnerabilities. Worked on defining key metrics and structuring the data pipeline , used on a regular basis for around 50 organizations to handle their vulnerabilities .		
• Vulnerability Source Integration - Engineered integrations with third-party sources like Veracode, Qualys, Tenable, Microsoft TVM to ingest vulnerabilities. Designed foundational systems to standardize and leverage this data across internal remediation workflows.		
• Hackathon Projects:		
○ Diagnostic Framework – Built a framework to streamline issue tracking across customer instances, reducing debugging time by 40% .		
○ ML for Vulnerability Response – Prototyped machine learning models for grouping remediation tasks, estimating remediation targets , and improving response workflows, implemented for the core application.		
○ PoA&M Generator Tool – Developed a tool to auto-generate Plans of Action & Milestones based on vulnerability data, developed for NowOnNow support team which used this to handle Servicenow vulnerabilities.		
○ High-Volume Data Generator – Created a scalable data generation tool to support load testing and performance benchmarking, generates 100M records across 20-30 tables with configuration, used by our performance team.		
Darwinbox Digital Solutions	Software Developer	Aug'18-Mar'19
• Designed and implemented a microservice architecture for capturing Audit Logs for all the data modified by each client in the system written in PHP with Yii Framework to capture the MongoDB oplogs and push it to SQS queueing system .		
• Created a Oplog Processor in Node JS that finds the object difference, taking into account string, array and embedded documents and converts all the logs in a user readable format. Created an internal dashboard in vanilla Javascript to allow for adding new trackable fields.		
NowFloats	Software Developer	Jun'17-July'18
• Designed and developed responsive web features on the website using frontend technologies in C#, Bootstrap, Javascript, JQuery and Knockout.js which is used by 50000+ clients on a daily basis.		
• Integrated the Facebook Graph API using it to enable merchants to share his products and updates over his facebook profile, page and Facebook Shop (facebook ads extension).		
• Using machine learning models , created a SPIDER module that can predict the sales revenue generated by a sales person given his history and his training for the product with up to 84% accuracy .		

- Designed and implemented a **Booking System Module** that can be used as a generic booking system for hotels, clinics, restaurants, using **Node.js** and **WebActions API**.
- Developed an internal module that allowed merchants to enable product offers and allow purchase of the product at discounted prices over **Boost Keyboard** using **Kitsune**, **k-Pay** and internal **Assured Purchase** module.
- Designed and developed an internal **Order Management Tool** dashboard that helps track purchases, payment status, delivery status and grievance redressal using **AngularJS** and **C#**.

Finomena(closed down operations May'17)	Software Developer	Feb'17-May'17
<ul style="list-style-type: none"> • Created and maintained internal dashboards used for Loan Management, Repayments, Collections, Transaction Tracking using PHP (Laravel Framework) to scale the system to 8000+ loans per month with Eloquent ORM for handling data in MySQL for storage of large amount of data. • Used Artisan framework for task scheduling, cron handling and testing. Also used Laravel modules for authorization, validation, event handling, mailing for handling internal & external mails and loan processing in the system. • Built web pages using Blade templates, HTML, CSS, Javascript, jQuery and Bootstrap for processing and analysing loan data and user data. 		
Babajob.com (acquired by Quikr Jun'17)	Software Engineer	May'16-Jan'17
Babajob telephony system(SMS and Voice) <ul style="list-style-type: none"> • Was involved in the redesign of the telephony system to scale it to 10,000+ inbound calls, 20,000+ outbound SMS per day. • Was involved in building a scalable system in Golang which used RabbitMQ as the message bus, Redis as in-memory cache and MongoDB for persistence. • Designed and implemented RESTful outbound SMS service to send SMS to users on specific events. • Implemented a basic logging framework in Golang for debugging and tracing. • Worked with product management to understand important metrics and helped in tracking those metrics. 		

PROJECTS

SSJK CRM System	Complete enterprise CRM platform demonstrating full-stack capabilities, business logic implementation, and real-world production experience. <ul style="list-style-type: none"> - Lead management & tracking system - Customer relationship management - Business process automation - Analytics dashboard with reporting - Sales pipeline tracking - Team collaboration tools
ACE-Coliving Website	Modern full-stack Next.js application with database integration, demonstrating expertise in React framework, TypeScript, and backend development. <ul style="list-style-type: none"> - Premium coliving spaces showcase - Hotel accommodations listing - Contact form with lead management - PostgreSQL database integration - Responsive modern design - SEO optimized
VOICE TRANSCRIBER	Unique AI/ML integration project combining Python backend, web interface, and containerization - demonstrates technical versatility beyond typical web development. <ul style="list-style-type: none"> - Speech-to-text conversion - Audio processing pipeline - Web-based interface - Real-time transcription - Docker deployment - File upload and processing

DISSERTATION & COURSEWORK

Dissertation Project Title	Human Activity Recognition using HMM based Intermediate Matching Kernel by representing videos as sequence of sets of feature vectors
Methodology	<ul style="list-style-type: none"> - Created a methodology to classify a given video into a predefined class based on the activity performed in the video. - Used MATLAB and Piotr's CV Toolbox to create the classifier and Python, PNetCDF and OpenMPI to extract relevant features from videos.
Machine Learning Technologies	<ul style="list-style-type: none"> - Studied the effectiveness of Bayesian classifiers, Gaussian mixture models, Perceptrons, Artificial Neural Networks and Support Vector Machines on linearly separable, non-linearly separable and overlapping data for data classification tasks. - Used Octave, MATLAB and SVMTorch III for studying and analysing the results.
Other Projects	Coursework projects included a basic Management Information System(MIS), Cybernetics Protector System and Product Management System
Paper Presentations	Presented the components of a basic information retrieval system and Google search model in Seminar of Information Retrieval System and Google's PageRank Algorithm

TECHNICAL SKILLS

Programming Languages	GlidePlatform(Proficient), Javascript(Proficient), NodeJS(Proficient), PHP(Proficient), Golang(Proficient), C++(Proficient), Java(Experienced), MATLAB/Octave(Experienced), Python(Moderately Experienced)
Web Technologies	Next.js, TypeScript, React, Bootstrap, HTML/CSS, Javascript, jQuery, Ajax, Knockout.JS
DBMS	MySQL, MongoDB, Redis, PostgreSQL, ElasticSearch
Queue Systems	RabbitMQ, Redis Queue, AWS SQS
Cloud & DevOps	AWS, Docker, Jenkins, Git, Linux/Ubuntu, OSX.
Miscellaneous	Git(Proficient), LaTeX (Proficient), Microsoft Office(Proficient), Mustache Templates & Handlebars.js(Moderately Experienced),ElasticSearch(Beginner).

ACADEMIC PROFILE

2016	M.TECH	Computer Science & Engg	National Institute of Technology, Goa	84.2%
2014	B.E.	Computer Science & Engg	LNCT Bhopal(R.G.P.V.)	85.8%
2010	XII (C.B.S.E.)	Science	St. Joseph's Convent School, Bhopal	83.0%
2008	X (C.B.S.E.)	NA	St. Joseph's Convent School, Bhopal	88%

ACHIEVEMENTS & ACTIVITIES

Professional	• Winners of NowFloats Hackathon for product innovation for sales.	2017
Academic	• Chancellor's Scholarship(Topper) by Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal	2013,2012
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	• Silver medalist in Persistent Systems Limited Programming Contest held at RGPV, Bhopal	2013
Others	• Organized intra-college programming competition, LNCT Bhopal	2012
	• Conducted cultural events in NIT Goa	2014-2016

POSITIONS OF RESPONSIBILITY

NIT Goa	Teaching Assistant, Computer Science & Engg Department	2014-2016
NIT Goa	Vice President - Computer Science Dept	2014-2016
LNCT, Bhopal	Student Coordinator, Training & Placement Dept	2013-2014