



Tushar Tyagi

Associate Staff Engineer

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Professional Summary

An enthusiastic Python Developer, having 8.7 years of well-rounded experience in designing and developing IT solutions, adhering to enterprise-grade development processes

He is an expert in designing high-performance, secure, and scalable data pipelines and web applications on the AWS stack. He has proven expertise in architecture, design, development, and maintenance of key web application components, as well as integrating 3rd-party solutions, system deployment, ETL processes, object-oriented programming (OOP), and applying design patterns effectively.

He has hands-on experience building event-driven IoT data pipelines, time-series data processing, and real-time stream ingestion — spanning domains including smart building automation, automotive, and banking.

He is currently working on an on-premises IoT smart building platform, designing and implementing end-to-end data pipelines, REST APIs, and notification systems to enable real-time monitoring and control of building environments.

Education

- Post Graduate Diploma, Advanced Computing, Centre for Development of Advanced Computing, Bengaluru, Karnataka, India
- Bachelor of Technology, Information Technology, Uttarakhand Technical University, Uttarakhand, India

Skill Set

- Competent in high-performance web architectures, object-oriented design/patterns, cloud application architectures, multi-tenant system architecture, and Microservices architecture
- Expertise in ETL design and development, database tuning, sharding, optimization, and data cleansing using MongoDB (NoSQL) Server stack
- Passionate about coding, design, and architecture, exploring new technologies and tackling challenges related to large-scale systems and long-term stability

Programming Languages

- Python, JavaScript

Web Technologies

- Django, AWS, React, CSS3, HTML5, XML, Web API, Bootstrap, Celery, NATS

APIs and middleware

- REST, JSON, Web Services, Redis

Database

- MongoDB, Redis, DynamoDB, Postgres, InfluxDB



Tools and platforms	<ul style="list-style-type: none"> JIRA, PyCharm, VS Code, Confluence, Slack, Podman
Domains	<ul style="list-style-type: none"> Automotive, Building Automation, Non-profit, Banking, Travel and hospitality
Other skills	<ul style="list-style-type: none"> Requirements gathering, elicitation and analysis, solution design, UX design, and technical documentation
AI Tools	<ul style="list-style-type: none"> Claude Code, ChatGPT, GitHub Copilot

Recent Projects

Project name

IoT On-Prem Smart Building Automation Platform

Client

A Leading Building Automation & Lighting Controls Company

Duration

Sep 2025 – present

Description

On-premises IoT data platform for smart building environments, ingesting real-time sensor data from connected devices and systems (energy, occupancy, HVAC, DALI emergency lighting) via event streams, processing and aggregating time-series data through automated pipelines, and exposing REST APIs with alerting and notification capabilities to support building monitoring and operations.

Technology Stack

Python, Django, InfluxDB, NATS, Podman, PostgreSQL

Responsibilities

- Collaborated with stakeholders to gather end-to-end requirements and translate business needs into technical specifications.
- Designed and implemented NATS stream ingestion endpoints for real-time IoT sensor data across energy, occupancy, HVAC, and DALI emergency lighting domains
- Built data processors and time-series aggregation pipelines to transform raw device data into structured, queryable formats
- Developed REST APIs with alerting and notification capabilities to expose aggregated building sensor data
- Built data processors and time-series aggregation pipelines to transform raw device data into structured, queryable formats
- Wrote unit tests and executed Behave BDD integration test suites to validate pipeline correctness across multiple environments

Project name

IoT Space Smart Platform

Client

A Leading Automotive Manufacturer

Duration

Sep 2023 – Sep 2025

Description

Smart platform to accelerate a connected environment by integrating smart equipment, devices, and sensors (IoT) across a leading automotive manufacturer and its stakeholders.

Technology Stack

Python, AWS, PostgreSQL

Responsibilities

- Collaborated closely with stakeholders, including project managers and clients, to gather and analyze project requirements effectively
- Designed and developed scalable and reliable services to enable seamless data exchange and communication between system components.
- Led the onboarding of new machines across multiple shops onto the platform, ensuring smooth integration.



- Optimized workflows for monitoring processes in automotive manufacturing to enhance efficiency and performance.

Project name

Internet Access Initiative

Client

A Non-Profit Organisation

Duration

May2023 – Aug 23

Description

Project involved working on an initiative launched by a non-profit organization and a telecommunication agency to connect every school to the internet and every young person to information, opportunity, and choice.

Technology Stack

Python (Django), Azure, PostgreSQL,

Responsibilities

- Led the process of gathering and analyzing project requirements by collaborating closely with stakeholders, including project managers, clients.
- Played a pivotal role in the overall system design, encompassing architecture, data flow.
- Designed and developed robust and scalable APIs (Application Programming Interfaces) to facilitate data exchange and communication between different system components.
- Worked on the implementation of map vector tiles APIs to enhance the project's mapping and geographical data capabilities.

Project name

Swimlane's SOAR

Client

A Banking financial institution

Duration

Nov 2022 – Feb 23

Description

A security orchestration and case manager system, which will be used by FCI team to investigate and resolve the financial fraud cases, escalated by L1 from salesforce

Technology Stack

Python, Aws, Data Bricks, Dynatrace, Splunk

Responsibilities

- Involved in streamlining the Salesforce and Swimlane integration by removing the poll based mechanism with event driven architecture and decreased the latency withing the system.
- Implemented the workflows within the Simelane platform for various use cases like case escalation, chargeback, platform integrations.
- Integrated the Mastercard's trace and alert ML APIs to detect the money mule behaviour and prevent fraud from happening.

Project name

Anti-Money Laundering (AML) Platform (Transaction monitoring and Name screening)

Client

A Banking financial institution

Duration

July 2022 -- Nov 2022

Description

Next generation AML platform used for Name screening and Risk Management



Technology Stack	Python, Apache Airflow
Responsibilities	<ul style="list-style-type: none"> Involved in designing and developing the data pipeline(s) using AWS Apache Airflow for ingesting customer, accounts and watchlist data set (from bank and wallet entity) to next generation AML platform used for Name screening and Risk Management
Project name	Fraud Sales Ratio Automation System
Client	A Banking financial institution
Duration	April 2022 – August 22
Description	A serverless ETL based data pipeline to evaluate the Fraud Sales ratio based on business rules, perform action, and generate FSR/merchant reports.
Technology Stack	Python, Aws (Lambda, DynamoDB, S3, SQS)
Responsibilities	<ul style="list-style-type: none"> Involved in planning and designing the FSR automation system. Implemented the desired system in python and deployed it to AWS.
Project name	Access Control Management
Client	A guest experience and reputation management product organisation
Duration	April 2021-Feb 2022
Description	An Access control system to provide flexibility to manage dashboard navigation, privileges access and notifications delivery.
Technology Stack	Python, React, Redux, MongoDB
Responsibilities	<ul style="list-style-type: none"> Implemented and Designed the Roles creation system. Restrict access to screens and notifications across dashboard. Rendering of navigation menu based on user access
Project name	Drip Marketing Automation System
Client	A guest experience and reputation management product organisation
Duration	Aug 2020-April 2021
Description	Project Involved Delivering Large scale of Sequential campaign based on end user's behaviour to recent mails.
Technology Stack	Python, React, MongoDB, Celery, Redis
Responsibilities	<ul style="list-style-type: none"> Involved in planning, designing, and implementation of Drip Marketing Automatio flow. Created a service which stores user behaviour and create guest segmentations dataset to deliver email from next node of campaign. Implemented the Celery Task Distribution System with redis for delivering mail/notifications through AWS SES and monitored it using Flower.
Project name	In-Room Dining
Client	A guest experience and reputation management product organisation
Duration	March 2020-May 2020



Description In-Room dining Platform where hotelier can configure his restaurants and guest can order food through concierge app.

Technology Stack Python, React, Redux, MongoDB

Responsibilities

- Developed the Restaurant's configuration menu (food category, subcategory, and Add-on), Food ordering screen (with functional cart) and food order management/tracking system

Project name

ETL TO Enrich and Streamline Reservations data

Client A guest experience and reputation management product organisation

Duration Sep 2019-March 2020

Description An ETL pipeline to Transform and Enrich Guest reservations data coming from various PMS systems.

Technology Stack Python, React, Redux, MongoDB, Celery, Redis

Responsibilities

- Extracted the guest data from multiple sources then transformed/enrich it based on guest's old profile/stay then stored it in respective matrices to perform conditional/analytical search on it through Mongo Aggregation.

Project name

PMS Integrations

Client A guest experience and reputation management product organisation

Duration July 2019-Sep 2019

Description An API and Webhook based Integration System which Normalise, and Store date from various PMS software's.

Technology Stack Python, MongoDB, AWS

Responsibilities

- API and Webhook integrations with various Hotel Management Softwares for data transfer and performing CRUD operations. For ex- Impala, Cloudbeds, VHP, WINHMS, IDS, CLOUDBEDS, INFOR, etc.
- Implemented a Serverless Architecture with Lambda and API Gateway to process hooks from Impala.

Project name

Marketing Automation and Guest Journey Platform

Client A guest experience and reputation management product organisation

Duration Jan 2018 - July 2019

Description Project Involved Delivering Large scale of campaign to projected Data source like guest segmentation based of customisable search on reservations dataset, Feedback dataset and through custom data upload, As well as trigger transaction emails to users on specific schedule on multiple channels

Technology Stack Python, React, MongoDB, Celery, Redis, AWS (EC2, S3, SES, SNS), Supervisor

Responsibilities

- Involved in planning, designing, and implementation of Marketing Campaigns and Guest Journey flow.



- Created a customisable guest segmentation system to prepare dataset for campaigns.
- Implemented the Celery Task Distribution System with redis for delivering mail/notifications through AWS SES and monitored it using Flower.
- Added Channels Like Whatsapp and SMS to Guest Journey
- Implemented analytics and revenue system through stats

Project name

CRM

Client

A guest experience and reputation management product organisation

Duration

Oct 2017-Jan 2018

Description

It was an integrated, data-driven software solutions that helps in improving how hotelier interact and do business with their customers.

Technology Stack

Python, React, Redux, MongoDB

Responsibilities

- Designed and created the guest profiling system while showing guest personas
- Implemented the backend of profile merging through parameters like email, phone no and stay details

