# TUSHAR VASANT PANCHAL

**Ph: 7816545189**          **tpanchal21@gmail.com**          **Loc: Mechanicsburg, PA**          **JobAuth: Greencard**

## Snapshot of Skills and Key Achievements:

- Have almost 20+ years of considerable exposure to all stages of SDLC, Agile software development, Tech planning, Automated testing, Observability, Devops integration etc.
- Extensive experience with AWS/Azure technologies, including AWS Lambda/Azure Functions (Python), S3/Azure blob storage, EC2, CloudFormation, Opensearch/ACS, DynamoDB/Cosmosdb, AuroraDB, IAM roles AND cost optimization.
- Led the successful development, and deployment of advanced Gen AI technologies and agentic AI technologies i.e RAG Chatbots, MCP, LLMs, Anthropic's Claude using AWS Bedrock, Machine Learning Model Cohere rerank via AWS SageMaker, Azure Chat GPT API, OpenAI GPT Cohere rerank api, amazon translate/image Rekognition service etc. significantly enhancing the organization's AI capabilities.
- Experience in software development best practices i.e. coding standards, software reuse, refactoring, continuous integration, test automation, TDD, static code analysis, peer review in Python, java springboot, c#, .NET.
- Considerable experience in mentoring junior engineers to maximize productivity.

## Languages/Software:

| | |
|---|---|
| **LANGUAGES** | Python, Java spring-boot, SQL, no SQL, .Net C#, ASP.NET |
| **AWS/Azure Essentials** | AWS Lambda, S3, SES, SNS, SQS, EC2, Cloudformation, IAM roles, Docker, Kubernetes, ECS, AzureAI, Azure app services, cognitive search, Blob storage, Azure function app, azure api management, app gateway |
| **GenAI & agentic AI Essentials** | LLMs, GPT, Anthropic Claude Haiku, Sonnet, Amazon Bedrock, Knowledgebase, Machine Learning models, Cohere rerank, Azure OpenAI, CosmoDB, Machine Learning, langchain, langgraph, langsmith, prompt mgmt, MCP, Foundation Models, RAG, Fine tuning, Translate, Rekognition |
| **ML Essentials** | AWS SageMaker, ML training/testing, Sk-Learn, pandas, linear, RF, XGBoost |
| **Web Essentials** | JSON, XML, XSLT, HTML, JavaScript, Node JS, ASP.NET, REST API, OpenApi |
| **Databases** | AuroraDB, MongoDB, opensearch, ACS, Redis, Dynamodb, sqlserver, cosmosdb, cognitive search service |
| **profile/projects** | Linked-in profile, github lab |
| **Certification** | AWS AI Practitioner AIF-C01, AI Early Adopter, Microsoft Cert (MCTS), AWS Cloud Practitioner, Strong IKM python assessment |

## Education:

| | |
|---|---|
| Masters in Computer Application | Bachelor of Science, Electronics |
| Gujarat University, INDIA | Gujarat University, INDIA. |

## Professional Experience:

***KPMG, USA (Contract)***                              ***Sr GenAI Lead Developer (from Jan 2025)***

As a Gen AI Developer Lead, I am also leading a team of engineers in many AI initiatives for KPMG.

**AI-Powered Knowledge Assistant Chatbots:** Designed and developed an enterprise-grade chatbots that enables users across the organization to perform intelligent AI-driven searches against a comprehensive internal knowledge base. This end-to-end solution leverages Azure AI Cognitive Services, CosmosDB, Azure Blob Storage, Python, FastAPI, Node.js, and a Vue.js frontend to deliver seamless natural language query experiences, conversation management and rich UI interaction. Recent enhancement includes an AI Chat system to process and respond to user queries based on uploaded documents, exposing AI chat as OAuth enabled MCP tool.

**Corpus Ingestion & Administration Pipeline:** Co-designed and built a robust administrative platform and data ingestion pipeline for managing the organization's knowledge base. This includes a full ETL process for processing, enriching, and storing structured and unstructured PDF/HTML vector data. The system incorporates monitoring and control capabilities through an intuitive web interface. Technologies used include TypeScript, Node.js, Python, pandas, FastAPI, Azure Functions, Event Grid triggers, CosmosDB, and Blob Storage.

***EBSCO Information Service, MA, USA***             ***Sr Software Engineer (July 2012 to Sept 2024)***

Over my extensive tenure at EIS, I gained experience across all stages of software development, DevOps integration, and technology stack migrations, including the transition from .NET to Java to AWS Cloud.

**NLP, Search Re-ranking and image recognition**: As a part of the AI team I successfully designed, developed, and deployed a GenAI Java spring boot suits of applications leveraging Anthropic's Claude using AWS Bedrock, RAG development using Bedrock knowledgebase and Cohere re-rank models through AWS SageMaker. I also developed serverless lambda using extensive python scripts making use of langchain and boto3 libraries to call the bedrock endpoint and automated tests for it. This project significantly enhanced the company's natural language processing and re-ranking capabilities. Have extensively used amazon Rekognition for image processing implementation.

**Content Summarization through AI**: I led the development of extensive Python code development for serverless lambda and also helped build a java spring boot service calling lambda that generates AI-driven summaries for HTML and PDF full-text documents, helping users make more informed decisions when selecting articles. We utilized Azure GPT GenAi models, GenAI AWS Bedrock's Claude Sonnet and Haiku models to develop this feature. Additionally, I integrated AWS Translation and Translation Document API, enabling localization capabilities across the platform. I led the successful design, development, and deployment of advanced Generative AI solutions with Azure gpt models.

Beyond these specific applications, I have played an integral role in projects ranging from email service (SNS/SES), ECS, authentication services, OAuth, SAML, OIDC application to migrating .net to java/aws.

***Agero Inc., Medford, MA, USA***　　　　　　　　***Principal Software Engineer (Mar 2006 to June 2012)***

At Agero Inc. (formerly Cross-country Automotive Services), a leading provider of vehicle roadside assistance in North America and Canada, I played a key role in leading various development efforts in the IT Enabling Services Technology Group.

Key projects include:

- **3rd Party Integration Projects**: Led the design and development of an enterprise-wide XML Gateway solution to facilitate seamless communication with 3rd party providers for services such as GPS, SMS, and email.
- **CRM Data-Only POP**: Designed and developed a feature for call center CRM applications, enabling agents to schedule pop activities. Implemented this using MSMQ 4.0 and WCF services.
- **Provider Selection Optimization**: Developed an Oracle-based system to optimize the selection of roadside service providers based on their performance and cost-effectiveness.
- **Tow to You and Dealership Network Projects**: Spearheaded design changes for OEM dealership network campaigns, incorporating new dealer selection logic and customer incentive schemes.

***IBM Global Services India Ltd, USA/India***　　　***Sr. Software Engineer (Aug – 2003 to Jan - 2006)***

At Artech Information Systems, a leading IT consulting and outsourcing company, I worked as a Software Engineer assigned as a consultant to IBM Global Services India Ltd. I supported U.S.-based clients like Merrill Lynch and Sprint PCS, providing maintenance, 24/7 support, bug fixes, and enhancements in alignment with CMM Level 5 standards.

In addition to leading enhancement efforts, I coordinated with onshore teams, led impact analyses for the Sprint Nextel merger, and implemented PGP encryption for secure communications. As a senior team member, I provided technical guidance on .NET technologies and trained junior engineers

***Cox and Kings Pvt Ltd, India.***　　　　　　　***Sr. Software Programmer (Dec–2001 to Aug-2003)***

At Cox and Kings India Ltd, a leading provider of travel and tourism services, I was the first Software Programmer in their newly established Systems Group. My primary responsibility was to design, develop, and implement a B2B intranet system and computerized leisure operations across multiple offices. I played a key role in system analysis, database design, and infrastructure setup, while overseeing development and testing teams.

***WF InfoTech Pvt. Ltd., India.***　　　　　　　　***Sr. Web Programmer (May–2000 to Dec-2001)***

At WF Infotech Pvt Ltd, a startup focused on building internet-enabled websites for UVI Holidays Pvt. Ltd., I was among the first programmers. My primary responsibility was designing and developing the company's flagship website, which catered to both B2B and B2C markets, specifically targeting tour operators and travel agents selling holidays to India.