VIPUL SHARMA

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ACADEMIC QUALIFICATIONS

Year	Degree	Institute	Performance	
2021	B.Tech - Computer Science Engineering	Institute of Technical Education & Research, Bhubaneswar	7.77/10	
2016	Class XII (ISC)	Loyola School, Jamshedpur	72%	
2014	Class X (ICSE)	Loyola School, Jamshedpur	84%	

WORK EXPERIENCE

PRICEWATERHOUSECOOPERS US — **Associate Solution Architect, Data Scientist & Full Stack Developer** — *P&T Digital, Global IFS, Sept 2021 - Present*

PwC Learning & Developments: PwC Full Stack Programme Boot Camps & PwC Certifications

- Achieved **certfications** for all **PwC Full Stack Programmes, .NET , Java & Spring Framework, NodeJS, React & Angular Boot Camps** during availibility due to personal growth in learning & development field.
- Also **got certified** for **Excellent quality Developer Persona Badge** & internal training programmers apart from technology related stack such as for **leadership qualities, learning pathways for individual health care as well as Gen AI 2.0.**

External Client: A Healthcare Diagnostics Company

- **Solution Architect, Data scientist and Full stack developer role** for **one of the largest healthcare diagnostics center in India** in application discovery phase using **Python, Langchain, Elastic Search, Docker Networking, Azure, React, Ollama, Llama, & embedding models such as mxbai-embed-large** as the most optmial solution technologies amongst lot others.
- Created **complete backend** for **app discovery phase** using **above techologies** as a **proof of concept for implementation phase** to **generate response based on the form request parameters** which generated required feature work item outputs.
- Created the **entire end to end delivery for backend from solution architecture in app discovery phase, along** with **design and implementation along with project management and support from the external client.**
- Created **complete frontend** to support the architecture with **VanillaJS & React** to encapsulate the above **input forms for respective backend work items**.

Microsoft Azure Devboards Product Release Notes Plugin

- **Full stack developer role** for **Microsoft Azure Devboards Product Management, Release Notes Plugin** using **Semantic Kernel, Python, Azure, React, OpenAPI** as the tech stack.
- Created **complete backend** for release **1.0** using **skills and contexts** where the semantic function was used to **generate response based on the form request parameters** which generated release notes.
- Above was done using **creating prompt logic with planners to do different semantic tasks and give out a text, pdf or an html** release notes **document as output** which was a **downloadable buffer stream**.
- Created **complete frontend** to support the architecture with **React** to encapsulate the above **input form which populated custom drop-down with epic features with selection check boxes for release notes generation**. The React frontend also provided **handle form validation, generation requirements and preview components before downloading the reports**.

Concourse 2.0

- **Full stack developer & Data/Solutuion Design Architect role** for Concourse 2.0.
- Played a key role in **architecture design, migrate, implement, test, release from Monolith to Event Based Module Federated Sub Module Distributed Micro-Front Ends** impacting organization's ROI by a huge profitable margin.
- Was a very **core member for the entire product life cycle** & took **important decisions** around all the **core feature, user stories along the enitre CI & CD** pipelines using **MongodDB, AzureServiceBus, RxJS, NestJs** as backend & **React & Angular** as frontend technology.
- Also implemented various **useful and logical distributed test designs using Unit, Integration, Performance & Regression testing using technology like Jest and SwaggerUI** for the respective context.

Absolute Systems & Functions: PwC Digital-IFS

- Worked as **Full stack developer as well as Data Engineer, Design & Architect role** for ABS SF.
- Played a key role in **activation of the ABS Master Data set & Inventory** to support **Performance Reporting.**
  - Designed **data entity relationship architecture and control flow chart** which involved aligning on **business requirements for interim & future states.**
  - Built **key mappings ABS Asset Names and Asset IDs using Excel formulas & script by writing cosine similarity** for intensive fuzzy string matching.
  - Implemented mappings to other **Inventory Governance data, Risk & Controls data & LeanIX field attributes** with **ABS data** in **Excel**.
  - Used **Power Query M for data ETL into Dataverse** for utilization metric reporting.
- Developed **PowerBI dashboards** enabling **Usage & Return on Investment Reporting dashboard, Operations Dashboard for Asset Management**.
- Collaborated in development of **Investment Intake Management Tool & Commercial Transparency Report** for **firm wide asset adoption & intake.**
- Designed **glossary related terms** for entire **ABS data model** in **Excel**

AI Factory: PwC Digital Generative AI Initiative

- Worked as backend developer for a key Generative-AI internal service, **Chat-PwC**, with an **overall high impact and success margin, adoption rate and utilization value** for the firm.
- Created **Proof of concept of end to end application development and deployment from given user story using ChatGPT from OpenAI**.
  - **Created** a sequence of classes using **Structural Design Pattern.**
  - Base classes in sequence include: Deployment to **Databricks configuration** class, **OpenAI Chat-GPT Large-Language-Model,** class to **engineer Prompt Templates**. **OpenAI API Res ponse class** to generate response.
  - Only **1 single object is created** from the above Response class & used for all the **service types including back-end, front-end, unit test, docker & pipeline with added code comments. Configuration** for used technolgy is based on user preferences.
  - From the above OpenAI model **Code generation, Code optimisation & Unit test is generated for both back-end API and front-end API** used to create the **Requirement packages file** for both back-end & front-end code.
  - Finally, using **Chat-GPT**, a **Docker-file** was created for the end to end application & which was then used to make an **Azure pipeline** for deployment.
- **Created a usecase** for **generative AI as a enhancer for Project Planning Phase of Engagement Risk, Resolve, Receive, Plan, Create and Deliver Lifecycle**.
- **Implemented SKLearn & LLMś in reusable components as MFEś** to be used in throughout the PwC Digital department.

Concourse User Story Coach: PwC Digital-IFS

- **Optimization of recommendation hierarchy and capability importing API's** for given user stories from **18 to 12 seconds & 19 to 12 seconds respectively** using **Python, Flask & MongoAlchemy** with proper security including **JWT-Authentication** following best practices.
- **Implemented the whole unit test case module using Pytest** having least dependencies using concepts like **fixtures, test-client, scopes, conftest, config files & class testing**. Got the **coverage** results from **0 to 80 %.**
- **Fixed codesmells with Sonarqube** for successfull deployment **passing the Veracode scans.**
- **Upgraded Python from 3.8 to 3.9** which also required me to **change built in system packages from JWT due to version conflicts**.
- **Fixed Azure pipeline issue of coverage synchronization for backend Sonarqube** and **fixed other Azure pipeline issues.**

Insights Platform & Usage Tracker: PwC Digital Labs

- Leveraged **Builder Design Pattern** to write a package in **Python** that gets user information from **Reusable Accessible Components** containers on servers
- Connected the package to **MySQL** server with proper implementation of **JDBC** that retains user's information per session during data extraction
- Used **PySpark** to create data-frame from the user class object & converted it to **Pandas** data-frame for final upload to the server

Microsoft PowerApps Professional Developer Bootcamp, PwC L&D

- Designed & built **PowerApps** prototype application called **Device Ordering App** on **low code** environment which compares & selects laptops from store
- Inculcated **Dataverse & Power Component Framework** to design **Dynamic Text Input** fragment that stores order from the user & submits it to the supplier
- Built **Supplier Portal** using **Power Portals** that checks the users order & approves it based on the desired conditions applied from **Flow Automations**

PRICEWATERHOUSECOOPERS BADGES

- **P&T** Digital: NodeJS Badge
- **P&T** Digital: Angular Badge
- **P&T** AWS Cloud Program Badge
- **P&T** Digital: PwC Quality Dev Persona
- **P&T** Digital Acumen
- **P&T** Digital: .NET Badge
- **P&T** Digital: Spring Boot Badge
- **P&T** Vantage: Developer Badge
- **P&T** Digital: Python Badge
- **P&T** Digital: Pro Dev
- **P&T** Digital: Human Centered Design

INSTRUMENTATION & AUTOMATION DIVISION, TATA STEEL JAMSHEDPUR **Research Internship** *May 2018 - June 2018*

Pseudo defect reduction in Surface Inspection System at CRM Bara *Project Supervisor: Mr. Ashish Tiwari, Principal Technologist*

- Sanitized **SQUINS** dataset with proper defect listing & classified metallic defects using **two-fold procedure** applied on the surface inspection system
- Implemented a **Convolutional Auto Encoder** to detect **27 types** of defects that would be further used to enhance the automation model

ACHIEVEMENTS

- Won **Global Championship for PwC Digital - D'Art of Disruption, 2023** for **Cybersecurity & Data Privacy with Generative AI.**
- Secured **2nd position for Loyola School in Provoke, 2015**, a **hacking inter-school annual IT fest.**
- Secured **3rd position for Loyola School in Quantum, 2016**, a **web-design inter-school competition.**
- Selected as **National Student of the Week from Camp - K12**.
- Recognized as **Grand Finalist from Google** for **Sahana Software Foundation**, a humanitarian and non profit organisation in **Google Code-in, 2014** amongst **24 other open-source organizations in the world**.

RELEVANT PROJECTS

SAGE: Vocabulary Improving Game

- Developed **SAGE**, a multiplayer game, using **Angular, TypeScript, Firebase & Material Design**, for teachers & students wanting to improve vocabulary
- Designed for a **classroom setting**, students try to guess the meaning of a word through hints which is controlled by the teacher authenticated via **OAuth 2.0**

Point of Sales: Sales Transaction Application

- Developed API endpoints using **Angular, Node & MariaDB** having login utility, editing & selling a transaction for a specific user
- Login utility always **(re)loaded** on display screen showing username & password for a particular user & the final receipt could be **emailed** to the user

Retriever: Retrieving Information from Document

- Pre-processed the document data by **tokenization, stop word removal & stemming** in **Python** thus calculating the **term & document frequency**
- Frequencies were used to take out the **term score** & information was then extracted by taking out the **cosine similarity**

Samadhaan: Concern Logging Interface

- Build a concern logging application using **PHP, HTML, CSS & JS** where concerns can be logged by a user & an administrator can attend those concerns
- Final system was used in **Ambuja Cement Colony** at Sindri, Jharkhand who uses this application internally to log rental & house concerns

Axxelerate: Python based Search Engine

- Created a **Python** based search engine using **Scrapy** for crawling webpages & stores the data in **MariaDB** which indexed a **Binary Tree** with **Outer Joins**
- Implemented page ordering using **PageRank** algorithm & **Flask** for the server with **Angular & Material Design** approach for front end

Lexical Anazlyser: Finite State Machine Implementation

- Used **finite state machine** having a set of states, a set of **transitions**, & a string of **input data**
- Lexical analyzer was then implemented in **C** to recognize a list of **identifiers & non-negative integers**

RESEARCH PUBLICATION

- Journal: **"Breast cancer data classification using deep neural network", IJISDC, Volume 3, Number 2, 2021, Article 115169**

CERTIFICATIONS

- **AWS**: Certified Solutions Architect
- **AWS**: APN Partner Cloud Economics
- **AWS**: APN Partner Business Professional
- **AWS**: Certified Cloud Practitioner
- **Coursera**: Python Development on AWS
- **Coursera**: Object Oriented Design Course

TECHNICAL SKILLS

Programming Languages	Python, C, Java, ES6, PHP, HTML, SCSS, SQL, NoSQL, R, YAML
Tools & Frameworks	Flask, SpringBoot, Single-Spa, Webpack, Node, React, Vue, Angular, Next, Pytest, JUnit
Software & Services	AWS, Power Portals, GitHub, Azure DevOps, Jenkins, TravisCI, Docker, Kubernetes, PowerBI, Alteryx
Data ETL-Analysis & DBMS	Pandas, Keras, Numpy, SkLearn, Tensorflow, Spark, MS-SQL, MongoDB, Maria DB, DynamoDB, Redshift, Dataverse

POSITIONS OF RESPONSIBILITY

- Teaching Assistant — *Digital Media Computation using Python, UMM, USA* — *May 2017 - July 2017*
- Research Assistant — *Power Consumption Controlled Analysis, UMM, USA* — *Nov 2017 - Mar 2018*

RELEVANT COURSEWORK

Software Design Patterns	Foundations of Computer Science	Probability & Statistics	Introduction to Databases
Object Oriented Design	Data Structures & Algorithms	Introduction to Machine Learning	Introduction to Operating Systems
Software Design & Development	Numerical Methods	Neural Networks & Deep Learning	Introduction to Compiler Design

FUN TAGS

Basketball, Football, CSGO, FIFA, Michael Jordan, Kobe Bryant, Goku, Vegeta, Burgers, Biryani, Shakes, Praying, Helping, Dancing, Gym, Nature & Singing