ISHAN P. BORKER

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Key Skills

Generative AI Technologies
RAG
LangChain
LLM
AWS Chatbot
Amazon Bedrock
BrowserBase
Perplexity.AI
Mosaic AI
Cline
Stagehand
Amazon Kendra
Amazon OpenSearch
Amazon Q Business
Amazon Q Plugin
mesop

Machine Learning
Python
FastAPI
Data Science
Supervised Learning
Unsupervised Learning
Computer Vision
NLP
Linear and Logistic Regression
Clustering algorithms
Decision Trees
Neural Networks
Reinforcement Learning
Feature engineering
Statistical analysis

Machine Learning libraries
Tensorflow
Keras
SpaCy
PyPDF
PyLDAVis
BERTopic
NLTK
PySpark
MLFlow

Algorithms
Classification
Regression
Clustering
Time series forecasting
Yolov3
Yolov4
OpenCV

PROFILE

- Accomplished software development professional with over 8 years of experience across diverse platforms, including Generative AI, Data Science, Machine Learning, NLP, Computer Vision, and Network Service Orchestration.
- Demonstrated expertise in Python, C++, FastAPI, MySQL, Tableau, Golang, Docker, Linux/Unix, POSTMAN, and JSON scripting. Proven track record in analyzing complex requirements, architecting robust solutions, and delivering end-to-end applications from design to deployment.
- With 8 years of specialized experience in machine learning, I excel at studying client requirements, recommending optimal algorithms, performing advanced feature engineering, and creating insightful visualizations.
- My experience spans the entire project lifecycle, from pre-sales proposals and requirements gathering to system design, implementation, technical documentation, and customer engagement.
- Highly adaptable and results-driven, I am dedicated to solving business challenges, embracing new technologies, and thriving in collaborative, fast-paced environments.
- I am eager to leverage my technical and management expertise to further my career in AI, contributing effectively to diverse and challenging portfolios.

EXPERIENCE

Persistent Systems, Verna, Goa as Lead Software Engineer, May 2022 - Present
Role: Apr 2024 – Present as **Lead Software Engineer**

- **UHG Optum Insights - Data (Onsite Client: United Health Group)**: Created evaluation templates for LLMs in Amazon Bedrock and documented AWS search service requirements, implemented lexical and semantic search in OpenSearch; handled claims data search and ingestion using Kendra and Q Business with S3 integration, compared search results from Kendra, Q Business, and OpenSearch; documented findings in tables and reports, explored Amazon Q plugin architecture in OpenSearch UI; set up Q-business index as a data source and provided accuracy feedback, configured Q-business index, demonstrated search scenarios, created custom plugins, and linked OpenSearch indices to S3 datasets; converted datasets to OpenAPI formats, assessed and compared search performance and latency across OpenSearch, Kendra, and Q Business using complex queries, prepared customer demo presentations, worked on image ingestion into OpenSearch by connecting S3 bucket of X-ray dataset to LLM, converting DICOM dataset into jpeg for ingestion, tested knowledge base of this dataset to Amazon Bedrock, developed front end UI for Aurora RDS database for patient records using mesop (insert and search operation), migrated the same code to Amazon SageMaker Notebook
- **Generative AI Platform development - Co engineering – Data (Client: Baldwin Risk Partners)**: Executed RAG classification and extraction for policy documents, explored chunking strategies for large extracted tables via LLM calls. For the Integration of Amazon Bedrock Agent and AWS Chatbot with Microsoft Teams, modified SNS email testing to publish messages inside Teams Channel, created knowledge bases and Amazon Bedrock Agents, tested prompts, and developed an application within the Microsoft Teams developer portal for smooth integration. In Actionable Web Technologies, conducted a detailed tabular analysis of BrowserBase and Maxun focusing on scalability and browser dependencies; developed Python scripts using BrowserBase Playwright APIs to input URLs, download relevant PDFs, and enhanced stealth mode to bypass CAPTCHA and login processes. This was applied across several carrier websites such as CNA, Selective Flood, and Hartford, with metadata integration and LLM prompt-driven downloads using Stagehand approach. The Capabilities of Perplexity.AI were enhanced by improving prompt caching, dynamic updates, response accuracy, cache persistence, and query handling, with successful business feasibility testing conducted in Copilot UAT. Mosaic AI model was fine-tuned on the RAG Component Classification and Extraction dataset using Databricks, tested with GPT-35-turbo-SLM and meta-llama models, then deployed and thoroughly tested. Client requirements were addressed involving risk map automation, combining structured and unstructured data sources, implementing graph databases for RFP automation, utilizing LLMs with structured knowledge graphs, graph RAG, and knowledge-augmented graphs, along with preparing comprehensive documentation and detailed use case presentations for various proofs of concepts

Mask R-CNN
Faster R-CNN
Named Entity Recognition
Relationship Extraction
Topic Modelling
Latent Dirichlet Allocation
Fasttext

Other Skills
Actionable Web Technologies
JSON
HTML
JS
PHP
Curl commands
Unix/Linux commands
Golang

OS
Linux/Unix
Windows
macOS

Database/BI tools
SQL
MySQL
Amazon S3
SpagoBI
Tableau
PowerBI
Navicat
GNU-Plot
Amazon Aurora RDS

Python Libraries
NumPy
Pandas
SciPy
Seaborn
Scikit-learn
Plotly-dash
Matplotlib

Tools/Environments
EMS
Crosswork Workflow Manager (CWM)
Network Service Orchestration (NSO)
Lux
Jupyter Notebook
Google Colaboratory
Kaggle Notebook
Databricks Notebook

- **CISCO NSO Engineering (Client: CISCO):** Supported EMS adapter workflows (distribute, activate, commit image) on IOS-XE devices, enhanced API robustness by adding error handling and input validation in Go code, refactored EMS adapter for CW infrastructure compliance with authentication options, performed add image, activate and commit using install method for IOS-XE devices, executed EMS APIs via crosswork admin SVM using curl, updated documentation, created unit tests for refactored code, developed a Go client POC to fetch CCO catalog and SMU details, retrieved multiple devices in job summary EMS code

Role: May 2022 – Mar 2024 as **Senior Software Engineer**

- **Routermation CISCO NSO Offshore Transition (Client: CISCO)**: Led Crosswork Workflow Manager (CWM) installation and development of adapters, resources, secrets, and EPNM; created and tested workflows and adapters for multiple applications using POSTMAN APIs (import, distribute, activate/commit image, job/device summaries, device upgrades, consolidated workflows). Implemented network device upgrades and adapters in Golang, executed workflows and SWIM APIs within the CWM UI. Managed Network Service Orchestration (NSO) installation and utilized Routermation Automation Kit for device onboarding, fleet/golden configuration upgrades. Performed LNT device upgrades via RAKfu Main workflow and lux test cases, resolved critical and major CW-EMS adapter issues using SonarQube, updated the CW-EMS adapter to support CWM 1.1 and integrated necessary libraries, and worked on IOS-XE device upgrade
- **PDF Text Extraction and Code Testing (Client: IBM Infosphere)**: Extracted and preprocessed PDF text from URLs with PyPDF, generated histograms using NLTK, performed extractive summarization (LSA, Luhn, TextRank, LexRank), and measured inference times. Tested FastAPI code for FastText classifier on a text classification dataset (categories: Chemical Hazardous, Restricted Prohibited, Neither), recorded total training times. Computed volumetric stats for catalog files, including unique UNSPSC for Primary/Corrected Category, and data point availability and missing counts per UNSPSC for corrected category
- **Serving NER and REL models on clinical trials dataset using SpaCy:** Built NER and Relationship Extraction pipelines (tok2vec, various transformers), analyzed loss curves, enhanced performance metrics. Deployed English SpaCy and custom NER/REL models with FASTAPI, tested via POSTMAN and Swagger UI. Dockerized FASTAPI NER, deployed on AWS EC2, and pushed Docker container to GitHub
- **Topic Modelling**: Worked on topic extraction on docoh dataset of companies (Intuit, UHG, Wells Fargo, etc.) using packages like BERTopic, Latent Dirichlet Allocation (LDA), and Contextual Topic Modelling (CTM). Performed dimensionality reduction (PCA, UMAP), and clustering (HDBSCAN) techniques, leveraged transformers (RoBERTa, FinBERT, sentence transformers), visualized topics with PyLDAvis. Development is done using Python inside Google Colaboratory
- **Binary classification of network attacks**: Performed EDA, data preprocessing (matplotlib, seaborn), statistical analysis, feature engineering (one-hot encoding, label encoding, scaling, normalization), and feature selection (filter, wrapper, embedded methods). Conducted model selection with cross-validation and bootstrapping, trained multiple classifiers (Random Forest, Decision Tree, XGBoost, Gradient Boosting, Voting Classifier), optimized hyperparameters via GridSearchCV and RandomizedSearchCV, evaluated performance metrics, exported the trained model using joblib, and worked on model explainability using eli5, Partial Dependence Plots, ICE, LIME, and SHAP
- Developed MCQ part of the test using Python, created a dataset of question bank using .toml for AI Technothon event and development was done using Python, GitHub Copilot, and VS Code; worked on Medical Image segmentation using U-NET, Mask R-CNN on NVIDIA GPU Cloud (NGC)

TechnoPro India, Bengaluru as Machine Learning Engineer, Dec 2020 - Apr 2022

- **Annotation (Client: Nexar)**: Worked on semi-automated annotation using CVAT, ML algorithms like YOLOv3, Faster R-CNN, Mask R-CNN, and manual annotation using tools like Super Annotate, VoTT, LabelBox, etc. Led a team of annotators, and trained them on annotations like bounding box, polygon, polyline, cuboid, video, 3D annotation, instance, and semantic segmentation
- **Smart Farming**: Implemented tomato image classification using SVM, KNN, MLP, LR. Development is done using Python inside the Jupyter lab

Amazon SageMaker Notebook
VSCode
PyCharm
Spyder
GitHub
Amazon EC2
Azure ML Studio
POSTMAN
Swagger UI
GitHub Copilot
AWS Code Whisperer
SonarQube
Docker

Languages
English
Hindi
Konkani
Marathi
Sanskrit
Japanese (Basic)

Date of Birth
11/08/1993

Address
"ABHA", H.N.1794, Walkeshwar Wada, Betim, Bardez, Goa – 403101

Hobbies
- Playing indoor and outdoor games
- Gymming, Yoga
- Listening to music
- Reading books, newspapers and technical magazines
- Watching news and movies
- Watering plants

- **Industry 4.0 (Client: Toyota Kirloskar Motors)**: Worked on detecting car parts in images and trained model using YOLOv3, tested code on car damaged parts detection using detectron2, Mask R-CNN, worked on predictive maintenance of bearing using regressors like SVR, RF, DT. Worked on Object Detection and Tracking of real-time intrusion using YOLOv4, OpenCV. Development is done using Python inside Google Colaboratory
- **Perimeter Intrusion Detection System (Client: Bengaluru International Airport Limited)**: Worked on POC, designing RFP on perimeter intrusion detection project for Airport surveillance covering aspects of Machine learning, Computer vision, RADAR for video surveillance, verification, tracking, access control security, and Smart Command and control system
- **Reviewer Analysis (Client: Nexar)**: Analyzed reviewer incident data in graphs using Python, matplotlib, and Seaborn, designed presentations, case studies, RFP, and POC for different AI-ML projects

Molecular Connections, Bengaluru as Senior Software Engineer, Jul 2020 – Oct 2020
- **EHR Predictive Modelling**: Cleaned EHR data, performed EDA, visualization, correlation, binary encoding on lab values, trained model, and exported model on the server using joblib, worked on FHIR Parser using Python, built HAPI FHIR Server by creating resources from JSON, tested REST operations on POSTMAN, created own FHIR Server

Rubixe, Bengaluru as Data Science Consultant, Dec 2019 - Jun 2020
- **Employee Performance Analysis**: Cleaned the data, performed EDA, created a visualization to find the department-wise performance of employees, and built a model to improve performance using ML algorithms like Random Forest, Gradient Boosting, XGBoost, ANN, KNN, LR, SVM, DT, used feature engineering, Grid & Randomized Search CV, SMOTE
- **Spare Parts Inventory Management**: Cleaned, analyzed the data, created the visualization, built a model using time series algorithms, and achieved better predictions for ARIMA
- **Improving ITSM**: Imported data from the server, performed EDA, implemented prediction on priority tickets, reassigned them using ML algorithms, used ARIMA, and SARIMA on incidents, achieved better predictions using Rolling Forecast
- **Sales Prediction**: Used SMOTE to handle imbalanced dataset, PCA for dimensionality reduction, predicted sales status using ML classification algorithms, plotted ROC, and precision-recall curve
- **Telecom Churn Prediction**: Predicted churn using ML classification algorithms, used K-fold, Stratified K-Folds CV to improve performance, plotted ROC, precision-recall curve, calculated churn-risk score, exported model on the server
- **Bank Credit Score**: Imported Customer Accounts, Demographics, and Enquiry data from the server, created a visualization to check factors influencing customers having a good or bad credit history, achieved 95% accuracy using ML classification algorithms

Digiapt Software, Bengaluru as Associate Software Developer, Oct 2019 - Nov 2019
- Categorized the data of companies using Tableau, plotting their locations using My Maps, used Snovio to capture emails of employees and analyze roles

Eaglys Inc. (Deputed from Teczuno), Tokyo, Japan as Research Engineer, Dec 2018 – Jul 2019

- **Back Office Manhour Management**: Generated reports using graphs, and presentations for attendance spreadsheet from Google Drive
- **Secure DB**: Tested SQL queries, achieved API documentation using Natural Docs, PyDoc

Teczuno Global India, Bengaluru as Data Analyst, Apr 2018 - Aug 2018
- Gathered data, developed an application to locate startups using Tableau, and built-up concepts as a part of pre-sales support

Anant Infomedia, Panaji, Goa as Project Trainee, Aug 2017 - Feb 2018

- **Employee Attrition**: Predicting employee attrition using classification, regression, clustering, and anomaly detection inside Azure ML Studio
- **Business Intelligence**: Used SpagoBI for data analysis, created dashboards, cockpits, reports and deployed on SpagoBI server, worked on PHP, JS, HTML, Navicat, MYSQL

INTERNSHIP EXPERIENCE

Rubixe, Bengaluru, Data Science Intern, Mar 2020 - May 2020

- **AI for Hiring**: Designed business proposal for student placement, built model using machine learning classification algorithms for placement prediction, and published paper in International Journal of Science and Research (IJSR)

Goa Electronics Limited, Goa, Project Intern, Oct 2018 – Nov 2018

- Designed Software Requirement Specification (SRS) for labor-employment, land dispute, and fire-emergency services, and created flowcharts for employment exchange, worked on the analysis of making compliant government websites

C-DAC ACTS, Pune, Project Intern, Jun 2016 – May 2017

- MTech Project Work: Implemented code of backpropagation using C in Ubuntu, used OpenMP technique to execute parallel code to improve efficiency, benchmarking done on Intel 64-bit, Intel Xeon architectures, achieved better performance on Intel Xeon Phi, carried out dissertation work and presented a paper in the International Workshop on Internet of Things and TV White Spaces (WIOT' 2017), published research paper in the International Journal of Current Research (IJCR)

CSIR-NIO, Goa, Project Intern, Dec 2013 – Jan 2014

- Research on robotic OS, implemented a serial port program to transfer data from one USB port to another in Ubuntu

EDUCATION

- M. Tech High Performance Computing at C-DAC and Veltech University, 2015 – 2017, 8.61 CGPA
- B.E. Computer Engineering at Goa College of Engineering (Goa University), 2011 –2015, 70%
- Higher Secondary School (Class XII) - Goa Board, 2010-2011, 74%
- High School (Class X) - Goa Board, 2008-2009, 82.17%

TECHNICAL CERTIFICATIONS

- Udemy: Intro to Google's A2A Protocol - Interoperable AI Agents
- Udemy: AI Agentic Design Patterns with Ollama & OpenAI Guide
- Udemy: Amazon Q Developer for Programmers and DevOps AWS AI coding
- Udemy: Responsible AI - Principles, Practices, and Applications
- Udemy: Prompt Engineering for Beginners - Learn ChatGPT Prompting
- Udemy: LLM Fine Tuning Fundamentals + Fine tune OpenAI GPT model
- Udemy: LLMs Mastery - Complete Guide to Transformers & Generative AI
- Udemy: Generative AI for Beginners
- Udemy: Intermediate Python - Memory, Decorator, Async, Cython & more
- Udemy: Learn Selenium with Python, PyTest & Frameworks
- Persistent Systems: GitHub Copilot Course
- Udemy: Serverless using AWS Lambda for Python Developers
- Udemy: AWS MasterClass - Monitoring and DevOps with AWS CloudWatch
- Udemy: AWS Security Best Practices
- Udemy: Introduction to Virtualization - 90 Minute Crash Course
- Udemy: AWS EC2 Crash Course + Load Balancing with Demos and PDFs
- Udemy: Learn Basic DB2 on Mainframe for Beginners
- Udemy: DB2 For Beginners
- Udemy: Containers on AWS ECS, EKS, and Fargate 2 hour Crash Course
- Udemy: AWS Serverless Lambda Functions 2 hr. Hands On Crash Course
- Udemy: Hands-On Introduction to CloudFormation - 2 hour course
- Udemy: Amazon Aurora PostgreSQL from A to Z
- Udemy: Git Going Fast One Hour Git Crash Course
- Databricks: EDW-ETL Migration to the Data Intelligence Platform
- Snowflake: Snowflake Sales Professional Accreditation

	• Snowflake: Snowflake Beginner Fundamentals • Udemy: Complete Agentic AI Bootcamp with LangGraph and Langchain • Udemy: AWS DynamoDB 2025s: High Performance Strategies Included • Udemy: Complete Generative AI Course With Langchain and Huggingface • LinkedIn: Cybersecurity Foundations • Udemy: AWS RDS & Aurora Crash Course – Zero to Hero in 3 Hours! • Udemy: Master RAG: Ultimate Retrieval-Augmented Generation Course • Udemy: AWS Certified Machine Learning Engineer Associate: Hands On • Udemy: The Absolute Beginners Guide to Cyber Security 2025 - Part 1, 2, 3 and 4 • Udemy: Introduction to Cyber Security - 2 Hour Crash Course • Udemy: AWS CDK for professionals (Python and TypeScript) • Udemy: AWS SAM Framework and AWS Lambda - A Complete Hands-on Guide • Persistent Systems: iAura Course • Udemy: AWS Lambda - A Practical Guide - Learn from an Expert • Udemy: Learn AWS Identity Management with AWS IAM, SSO & Federation • Udemy: AWS Identity Access Management (IAM) Practical Applications • Udemy: Introduction to AWS - Understand AWS basics in 3 hours • Persistent Systems: Generative AI Foundation Course • LinkedIn: Preparing for the Future of Work with AI Agents • LinkedIn: Preparing Your Organization for AI Agents • LinkedIn: Leading through AI Agent Disruption • LinkedIn: Transforming Business with AI Agents: Autonomous Efficiency and Decision-Making • LinkedIn: Fundamentals of Agentic AI: Business Implications and Ethical Insights • Udemy: Gemini Google AI: The All-in-One AI Masterclass 2025 [NEW] • Udemy: Mathematics Behind Large Language Models and Transformers • Udemy: Introduction to Large Language Models (LLMs) In Python • Udemy: MCP Crash Course Complete Model Context Protocol in a Day • Udemy: Intro to Large Language Models (LLMs) • Participated in Semicolons 2025, Annual Global Hackathon of Persistent Systems • Persistent Systems: Python ML Competency Level - 3 Certification • Persistent Systems: Python ML Competency Level - 2 Certification • Udemy: Automate the Boring Stuff with Python Programming • Udemy: Complete Python Bootcamp 2024: Zero to Expert in Python • Udemy: AWS SageMaker Practical for Beginners Build 6 Projects • Udemy: MongoDB – The Complete Developer's Guide 2024 • Udemy: Complete Tensorflow2 and Keras Deep Learning Bootcamp • Udemy: Taming Big Data with Apache Spark and Python – Hands-on • Udemy: Natural Language Processing with Python • Udemy: Natural Language Processing with Transformers in Python • Udemy: LangChain with Python Bootcamp • Udemy: REST APIs with Flask and Python in 2024 • Udemy: Python for Data Science and Machine Learning Bootcamp • Udemy: Complete Data Science, Machine Learning, DL, NLP Bootcamp • Udemy: Git for Geeks: Quick Git Training for Developers • Udemy: Amazon Bedrock & AWS Generative AI [Beginner to Advanced] • Udemy: Generative AI: Beginner to Pro with OpenAI & Azure OpenAI • Udemy: LangChain- Develop LLM-powered applications with LangChain • Persistent Systems: Generative AI for Practitioners Certification (Objective and Subjective) • Persistent Systems: Generative AI Foundation – Generative AI Assisted Coding using Amazon Code Whisperer • Databricks Accredited Generative AI Fundamentals • Career Essentials in Generative AI by Microsoft and LinkedIn • Databricks Lakehouse Machine Learning Associate • Persistent Systems: Participated in Semicolons 2023, Annual Global Hackathon of Persistent Systems • Fundamentals of the Databricks Lakehouse Platform Accreditation • Persistent Systems: Information Security Awareness Secure Coding/Data Handling & Privacy Training • Udemy: Deployment of Machine Learning Models

- IABAC, Amsterdam: Certified Data Scientist & Data Science Foundation by
- Deep Learning specialization by Coursera and deeplearning.ai on Coursera.org
- Certified Data Scientist course completion certificate by DataMites, Bengaluru
- Paper publication “Parallelization of Backpropagation Algorithm & Benchmarking” in IJCR
- Paper publication “Artificial Intelligence for Hiring” in IJSR
- Paper presentation on “Backpropagation Algorithm & Use of OpenMP in ML” in the International Workshop on IOT & TV White Spaces
- 1st prize in National Summer Training Program on “Bigdata & Hadoop” by Revert Technology Pvt. Ltd., EDC-IIT Roorkee
- Diploma Course in Java programming with JDBC and C programming at MICE

NON-TECHNICAL CERTIFICATIONS

- Udemy: Business Communication Skills: Business Writing & Grammar
- Udemy: Generative AI for Leaders & Business Professionals
- Udemy: Entrepreneurship - How To Start A Business From An Idea
- Udemy: Generative AI for Business Leaders: A Quick Overview
- Udemy: Product Management 101
- Udemy: Project Management Fundamentals
- Udemy: Leadership: Practical Leadership Skills
- Udemy: Business Communication Skills: Handling Clients & Customers
- Udemy: Delegation Strategies for Managers
- AMCAT certification exam - 77.72 percentile, Apr 2017

DECLARATION

I hereby declare that all the information provided above is true to my knowledge.

Sign: **Date:**