Vaibhav Thakur

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Education

Masters of Applied Computing, Wilfrid Laurier University, GPA 3.9 — Sep 2023 - Dec 2024

Bachelor of Technology, Computer Science, Rayat Bahra University, GPA 3.4 — Jul 2015 - Jul 2019

Professional Experience

Data Analyst and RPA Developer Intern, Brookfield Asset Management — Sep 2024 - Present

- Developed scalable and adaptive AI-driven automations using OpenAI and Amazon Q, enhancing business decision-making and data-gathering accuracy by 75%.
- Built ETL pipelines to extract financial market data, load it into SQL Server and AWS Cloud, and integrate it with Power BI for internal and external business reporting, data warehousing, and analytics.
- Integrated Azure AI's Document Intelligence and OpenAI APIs into invoicing workflows across business units, improving data-driven pipelines to predict payment delays and optimize downstream processes.
- Prototyped agentic automation solutions using Communication, Task, and Process mining to optimize re-insurance contract management data accuracy and compliance.

Senior Analyst, Accenture — Oct 2021 - Aug 2023

- Developed a scalable Data-Driven framework to optimize the automated testing process by integrating HP UFT, ALM, and Microsoft Excel, reducing the test execution time by 75%, from 7 days to 1 day.
- Automated end-to-end testing by integrating test cases into Azure DevOps CI/CD pipelines, enabling continuous validation of application functionality and reducing overall testing efforts by 30%.
- Performed project management duties by leading an agile team of 6 automation developers, analysing test coverage and conducting code reviews, reducing defect rates by 25%, and accelerating deployment timelines by 30%.

Software Engineer, Tata Consultancy Services — Jul 2019 - Oct 2021

- Automated the execution of SQL queries on SAP Logon by integrating HP UFT & Excel Spreadsheets, increasing test data management and accuracy by 40%.
- Managed Integration Testing projects by working with 15 automation developers, overseeing workflow development, and reducing testing efforts by 95%, from 5 days to 3 hours.
- Managed over 5000 end-to-end automated QA tests for web applications, using HP's UFT and VBScript programming, for functional, regression, and user acceptance testing.

Skills

- *Programming Languages*: Python, VBScript, Java, JavaScript, C#
- *Tools and Technology*: UiPath, Workato, Microfocus UFT, Azure DevOps, SQL Server Management System (SSMS), Android Studio, AWS RDS, EC2, S3 Bucket, Junit, PostgreSQL, PGAdmin, Power BI
- *Domain knowledge*: Asset Management, Insurance, Consumer Goods & Services, Commodities Trading

Projects

Swift Shift Finder - Android Application

- Built a job-matching app using Android Studio, integrating RESTful APIs written in Node.js and JavaScript, hosted on AWS EC2.
- Developed and deployed APIs on AWS EC2 to support real-time data synchronization between the Android app and AWS RDS, reducing data latency by 40% and improving the efficiency of job matching and application tracking features.
- Improved job matching accuracy by integrating Hugging Face's NLP models for keyword extraction and summarization of resumes and job descriptions.
- Managed data storage using AWS RDS (PostgreSQL) and S3 for file storage, optimizing database queries with Postgres SQL.
- Designed the app's UX/UI using Figma, creating wireframes and prototypes that served as the baseline for front-end development.

Adaptive Focal Loss for Prostate Segmentation

- Developed an AI-powered automation solution for prostate cancer segmentation, implementing an adaptive focal loss function and improving segmentation accuracy by 2.7%.
- Integrated PyTorch & Scikit Learn machine learning frameworks to implement advanced CNN architectures, improving prostate boundary delineation and achieving superior performance over standard techniques.
- Optimized deep learning model performance by designing custom data pipelines, preprocessing 3,360+ micro-ultrasound images, & augmenting techniques to enhance model generalization across varied clinical scenarios.

Anxiety Classification Through Audio and Visual Expression

- Implemented deep learning models (LSTM, BERT) using Keras and TensorFlow for analyzing audio-visual data, achieving 85.35% accuracy in anxiety classification and integrating them into a Flask-based web application for real-time detection.
- Built and managed data pipelines for preprocessing text, audio, and visual data entries, enhancing model training efficiency by 30% through text vectorization and tokenization.
- Fine-tuned BERT and LSTM models for anxiety detection, achieving a 15% improvement in identifying nuanced emotional patterns, and integrated them into a user-friendly web interface.

Phishing and Clickbait Detection

- Built a scalable data pipeline using Python and Flask to preprocess and analyze 10,000+ URLs, extracting 87 features (e.g., URL length, domain age, page rank) with 95% data accuracy, enabling real-time phishing detection with 96.24% accuracy using a Random Forest model.
- Developed a Google Chrome browser extension leveraging the Random Forest model to provide real-time phishing detection, reducing user exposure to malicious websites by 40% and integrating seamlessly with Flask for local hosting and secure data processing.
- Designed and implemented a feature selection process using SelectPercentile and f_classif, reducing feature dimensionality by 30% and improving model performance, achieving a 96.61% accuracy with hybrid feature sets.