Kapil Madan

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Professional Summary

- **ISTQB certified** with **7+ years** of extensive work experience in **Automation** Testing, **Performance** Testing, **Functional** Testing, **API** Testing (Rest and Soap) with demonstrated ability to multitask, establish priorities and meet project deadlines.

- Hands on experience with Web Automation tool like **Selenium** web-driver with Java; Desktop Automation tool like **SikuliX, UI Path, AutoIT**; Performance testing tools like **Load Runner, JMeter**; Mobile Automation tools like **Appium**; Performance Monitoring tool like **Dynatrace, Zenoss**; Project Management tools like **JIRA, Rally, Quality-Center (ALM)**.

- Experience on working in Agile **Scrum/Kanban** methodology, preparing **test plan** and **designing test cases** based on user stories and requirements, performing **black box/white box** testing, developing UI and mobile test **automation frameworks (Hybrid/POM/Cucumber)** from scratch and using **TestNG/Junit/Extent Reports** for regression test execution and reporting.

- Knowledge of build tools like **Git, Maven, Jenkins**, working with ESX servers and creating VM's and use them to create test jobs as infrastructure, implementing **CI/CD pipeline** and executing regression tests in a parallel and distributed environment.

- Developing tools for testing as per project requirements and diverse experience of working in product-based and service-based companies across various domains like – Telecom, Banking, Salesforce, Content Operations.

- Good understanding in the field of **Machine learning and Artificial Intelligence** techniques like regression/classification/clustering, Natural Language Processing (NLP), Deep/Reinforcement learning.
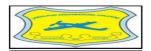
Education

- M.S in Machine Learning and Artificial Intelligence from Liverpool John Moores University, United Kingdom, 2020-2021

- Post-Graduation Diploma in Machine Learning and Artificial Intelligence from International Institute of Information Technology, Bangalore (IIIT-B), 2019-2020

- B.E in Information Technology from Government Engineering College, Jabalpur, 2010-2014

Technical Skills

Technology	Software Testing – Functional/Automation/Performance, Data Science- ML/AI
Languages	C/C++, JAVA, Python (3.x)
Software Testing Tools	**Automation** – Selenium/TestNG, Sikuli, UI Path, AutoIT **Performance** – Load Runner, JMeter, Dynatrace, Zenoss **API Testing** – Postman, SoapUI, rest-assured(API automation) Other – SonarQube (static code analysis), Wraith (Webpage Comparison)
Deployment and Build Tools	Git, Jenkins, Maven
Modelling Techniques	Regression (Linear/Non-Linear), Logistic Regression, SVM, Decision Trees, Random Forest, Ensembles, Boosting, Principal Component Analysis, Natural Language Processing (NLP), Neural Networks- Deep/Reinforcement Learning

Professional Experience

VMware – Senior *Member of Technical Staff*

Working as a project lead to define and implement end-to-end QE process in Content Operations and Strategy team that develops content management tools to conduct operations for authoring, publishing, review, and documentation strategy for 100+ VMware products.

Roles and Responsibilities -

- Travelled onsite for understanding detailed functionality and test requirements for end to end process of different toolchains involved in Content Authoring and Publication. Defining **Test plan**, create **test scenarios/cases,** conduct POC's & setting up infrastructure using different technologies like **TestNG** for test Execution, **Selenium** for web Automation, **SikuliX** for Windows Automation, **Load runner** for Performance Testing, **Maven** and **Git** for integration with **Jenkins**.

- Designer and developer of **hybrid UI test automation framework** which is now used across different QA teams for web and desktop automation in VMware. The vanilla code is open source and available at– https://github.com/kmadan92/QE-Test-Automation-Hybrid-POM-Framework.

- **Automated 600+ test cases** individually in first 3 months of joining that significantly reduced manual effort and time for test execution. Created reusable utilities to ensure maximal code reuse thereby reducing size of source code by 25-40%.

- Owner of performance testing efforts. Load testing of application with **3000+ concurrent users**. Defining workload model and identifying server-side performance bottlenecks.

- Develop automated tools for **Automated PDF and HTML comparisons** from two different environments to **compare 800+ PDF's pages** and **200+ web pages** in **15 different locales.**

- Applied **NLP techniques** like – tokenization, stop words removal, spell corrector, Canonicalization (stemming/lemmatization), word embeddings, bag of words, TF-IDF to perform **sentiment analysis** of customer reviews on VMware products by creating **deep learning models** based on **RNN** and **LSTM's**. The code is available at - https://github.com/kmadan92/DeepLearning_RNN_LSTM_Customer-Sentiment-Analysis which was used to conduct initial POC.

- Create an **AI-based chatbot** to streamline application support and improve customer experience. The vanilla code which works with Zomato API's to search restaurant is available at- https://github.com/kmadan92/NLP_RASA_Chatbot-for-Restaurant-Search.

Deloitte – *Consultant*

Worked as a test automation developer within a scrum team for multiple projects based on salesforce in healthcare and banking sector. Major contribution involves developing 750+ automated tests and executing 2000+ tests as part of regression cycle in every release.

Roles and Responsibilities -

- Key contributor to **codeless test automation framework**. The framework enabled people with non-technical roles like Business analyst and Project managers to automate features with any knowledge of language or underlying framework.

- Worked as a key resource for testing **data migration** from one Salesforce Org to other. This was the first ever project in salesforce domain industry which involves combining multiple salesforce orgs into one in salesforce org.

- Perform **white box testing** and implemented **SonarQube** as dev code analysis tool to detect bad patterns, styling, dead code and issues earlier in release cycle and improve code coverage, statement coverage and branch coverage in tests.

- Automated **REST API's with JMeter** and performed load testing for the same.

- Implemented **CI/CD pipeline** by hooking test jobs with deployment jobs. Created test jobs over Jenkins as infrastructure. This enabled developers to execute tests and get instantaneous feedback after making changes to their code.

- Experienced in training and mentoring team members with product knowledge and business processes.

Quality Kiosk Technology – *Sr. Performance Engineer*   *Jan 2016-March 2017*
                                                                             Mumbai

Worked as a team lead in Banking Domain managing a small team of 4 people that assures performance benchmark of banking application to achieve maximum stability with minimum utilization of resources and high customer satisfaction.

- Preparing Detailed test plan explaining the test scope, testing environment and test system architecture, modelling workload for performance tests developing automated performance test scripts by implementing correlations, parameterization and verifications using tools like Load Runner/Jmeter.

- Execute **Benchmark, load, stress, endurance, volume** and other non-functional tests. Monitor application logs to determine system behavior.

- Analyze heap and memory dumps, JVM architecture, AWR reports, Garbage Collection mechanisms to identify performance gaps in application using appropriate monitoring tools.

- Analyzing trends, finding bottlenecks, identifying memory leakage, and giving recommendations to optimize and improve architecture and performance of application.

Amdocs – *Software Test Engineer*   *May 2014-Jan 2016*
                                                                             Pune

Worked as a part of team in telecom domain that develops OSS/BSS products to maintain network and CC&B operations for customers.

- Analyzing business requirements, planning, and tracing requirements from **Requirements traceability Matrix (RTM)** to test cases and managing end to end testing.

- Preparing test cases using techniques like equivalence partition and boundary value Analysis to ensure that 100% test coverage

- Design, develop, maintain, execute, and automate test scenarios & test cases using Selenium/TestNG for **Regression testing**.

- Effective **Defect tracking** through JIRA.

- Strong problem-solving skills and very good time management skills.

Pro-Bono Projects (Code available at my Git page. https://github.com/kmadan92)

Gesture Recognition- *Video analysis task using computer vision to classify different hand gestures*

- The data consist of videos as a sequence of 30 frames (or images). The gestures are continuously monitored by the webcam. Each gesture corresponds to a specific command:

  -Thumbs up: Increase the volume

  -Thumbs down: Decrease the volume

  -Left swipe: 'Jump' backwards 10 seconds

  -Right swipe: 'Jump' forward 10 seconds

  -Stop: Pause the movie

- Performed image pre-processing and applied different image augmentation techniques to increase accuracy of classification
- Used Conv3D where the input to a 3D conv is a video (which is a sequence of 30 RGB images). If we assume that the shape of each image is 100x100x3, for example, the video becomes a 4-D tensor of shape 100x100x3x30 which can be written as (100x100x30) x3 where 3 is the number of channels
- Used CNN+RNN approach in which the conv2D network will extract a feature vector for each image, and a sequence of these feature vectors is then fed to an RNN-based network. The output of the RNN is a regular softmax.
- Tuned hyperparameters to achieve optimal accuracy and minimize loss

Telecom Churn Prediction- *Prediction of churning customer in telecom domain*

- Performed Data preparation and cleaning, Exploratory Data analysis like univariate, bivariate, time series to identify trends in data.
- Feature engineering to identify important predictors and create new derived features from existing ones.
- Used Principal Component analysis techniques for dimensionality reduction.
- Creating different machine learning models like – Logistic Regression, SVM, Decision trees, Ensembles, Boosting and coming up with best model based on classification accuracy, sensitivity/specificity.
- Tuning hyperparameters and developed machine learning models like – Logistic regression, SVM, Decision trees, Random Forest for prediction of churn.
- Analyze important metrics like, Accuracy, Sensitivity/Specificity, ROC curve to find best fitting model

Improvement to Viterbi Algorithm- *Improved algorithm for better POS tagging of unknown words*

- Implement an HMM based POS tagger using vanilla Viterbi Algorithm
- Improvement to Viterbi algorithm to tag unknown words using a rule-based tagger
- Modified vanilla Viterbi to tag unknown words by tagging unknown words with transmission probabilities in HMM.