

# Tushar Teji

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## EDUCATION

<b>MS, Information Technology</b>	University of the Cumberlands, Williamsburg, KY	<b>December 2022</b>
<b>Master, Electrical &amp; Computer Engineering</b>	Illinois Institute of Technology, Chicago, IL	<b>May 2018</b>
<b>BE, Electronics &amp; Comm. Engineering</b>	Panjab University, Chandigarh, India	<b>May 2011</b>

## TECHNICAL SKILLS

<b>Programming:</b>	Python, Perl, C/C++, Bash, MATLAB, SQL, HTML, CSS, Visual Basic, Verilog, and VHDL
<b>Python Tools:</b>	<u>Libraries</u> - TensorFlow, OpenCV, SciPy, NumPy, Pandas, etc.; <u>Web Frameworks</u> - Django, Flask
<b>Testing Tools:</b>	Functional Testing, Behavior-driven Development, Unittest, Pytest, Robot framework, Selenium
<b>DevOps Tools:</b>	Jenkins, Git, GitHub, JFrog Artifactory, PagerDuty, Splunk, Chef, Terraform, Docker, New Relic, & AWS
<b>Other Tools:</b>	MySQL, GNU Octave, Visual Studio, and Microsoft Office – Word, Excel, Power Point, and Outlook
<b>Operating Systems:</b>	Unix, Linux, and Windows

## WORK EXPERIENCE

**Technology Square Inc., Python Developer** **May 2022 – Present**

**Client:** Bank of America (Remote)

- Developed various types of Forex trading calculators using Python and wrote corresponding unit test cases
- Utilized automation & testing applications to perform functional & non-functional requirements on the Quartz (Python) platform
- Participated in gathering requirements, developing codes, investigating automation failures regularly, & reporting status
- Collaborated with test engineers weekly to discuss automated regression setup, available validation tools, and test plans
- Managed codes and test scripts using internal Quartz source control and tracked bugs using JIRA
- Worked in an Agile environment utilizing various agile software development methodologies

**TEKSystems Inc., Python Developer** **August 2021 – May 2022**

**Client:** PNC Bank (Remote)

- Engaged in designing test strategies for Recurring Transaction Forecasting Tool (model) that utilized rule-based classifier to predict transactions that have a high probability of being recurring
- Wrote various unittest cases in Python to validate text processing performed by the model on the transaction descriptions ingested from source tables in the Hadoop data lake
- Developed test cases for validating intermediate statistics and feature variables calculations such as median and standard deviation
- Wrote data validation scripts to test the final score calculations such as forecast date, confidence score, consistency score, recurring flag, and forecast variance
- Designed test plans and developed validation scripts for Available Balance model (predicts available balance for next 3 days) and Card Behavioral model (predicts credit scores for credit accounts)
- Performed testing of Pyspark applications using Python's Pandas and Numpy libraries
- Queried huge sets of customer information using Hive and Impala | Wrote and executed various complex SQL queries using spark jobs with Hive integration
- Utilized Application and Test Management tools such as Micro Focus ALM and Atlassian Xray to create and organize test plans, execute manual tests and generate test summary reports

**US Tech Solutions, Python Developer** **February 2020 – February 2021**

**Client:** Farmers New World Life Insurance (WA, USA)

- Converted in-house Base, File and Excel utility Perl modules into Python and wrote various unit test cases to support the modules
- Worked on cleaning up the former relational tables and developed automation scripts for storing, fetching, and manipulating tables
- Reviewed and tested various Data Validation Python scripts, remodeled dependent configuration files and system modules
- Rewrote broken Python validation and comparison scripts from scratch utilizing Pandas and NumPy libraries
- Assisted teams next door on their Python projects by participating in their team meetings as the language expert
- Explained coding and designs to different levels of business in technical and non-technical manner

**Clients:** Capital One (TX, USA), Charter Communications (CO, USA)

- Designed, developed and maintained web-based applications to enhance the performance & reliability of currently running apps
- Involved in the development of new industry-leading products using the company's open-source based tech stack
- Created various RESTful web services with Django, MySQL, and MongoDB
- Translated and refactored various C/C++ codes into Python scripts based on metrics such as efficiency, throughput, and project
- Rewrote various bash scripts and Perl scripts into Python utilizing various modules to deliver a certain format of data
- Worked on projects involving writing and as well as reading data from CSV and excel file formats using Python
- Created Docker containers utilizing existing Linux containers & AMI's. Created Docker containers from scratch as well
- Worked on Gitlab CI and Jenkins for CI and performed various end-to-end automation for all builds and CD
- Built CI/CD Pipeline using Jenkins to retrieve the code, compile, perform tests, and push the artifacts to JFrog Artifactory
- Worked with AWS CloudFormation Templates for multiple services and centralizing it between the service | Hands-on experience in automating deployment using Cloud Formation Template, Terraform, Chef, Docker
- Worked on other AWS services like EC2, S3, ELB, Auto-scaling, ECS, Route53, VPC, CloudWatch, and Lambda

**Chamberlain Group (IL, USA), *Intern - Intellectual Property Engineering******June 2017 – August 2017***

- Worked on Landscape Search and White Space Analysis in the field of Garage Door Openers and associated Trainable Transceivers | Developed Patent Map on connectivity and Internet of Things (IoT)
- Utilized World-class tools and resources such as Derwent Innovation, Innography, LexisNexis TotalPatent, etc.
- Interacted with the USPTO Officials, and worked with outside Patent Attorneys on lawful matters related to Patents
- Aligned Patent activities with corporate strategy and needs | Offensive and defensive Patent strategies

**Signicent (Chandigarh, India), *Sr. Patent Research Analyst******May 2013 – August 2016***

- Worked on varied technologies such as CMOS, VoIP, Reusable Launch Vehicles, MicroLEDs, IGBT, Smart Watch, Smart Glass, Airships, Ultrasound, etc. | Handled 70+ projects including but not limited to Patent drafting, Landscapes, Prior-art searches, Novelty searches, Invalidations, Infringements, FTOs, Market researches, Trademark searches, Portfolios, etc.
- Handled big team of patent experts in the Electronics/Electrical Department (as well as other departments such as Mechanical and Biomedical) | Provided trainings to teams | Administered resource allocation | Organized various meetings
- Developed various automation tools using VBA in Excel that helped reduce the task time from hours to seconds | Wrote various Macros and VB programs | Honored with “Out-of-the-Box Thinker” Award for working on such tools

## **PROJECTS**

### **Alien Invasion**

- Developed a version of the popular arcade game “Alien Invasion” in which a player controls 2-dimensional ship movement and fires up aliens coming from the top with the intentions of invading the territory.
- Skills: Python, Pygame, unittest

### **Algorithms Implementation**

- Developed programs to implement algorithms for solving unconstrained optimization problems
- Implemented 4 algorithms: Steepest Descent, Newton, BFGS Quasi-Newton, and Conjugate Gradient
- Skills: Python, SciPy, Matplotlib

### **Digital Logic Simulator**

- Built a digital logic simulator that can simulate non-trivial digital systems including CPUs
- Simulator was designed to Simulate synchronous circuits representing FSM, which were specified in EasyVL (simplified version of Verilog), a language designed specifically for this project
- Skills: C++