

# PIYUSH SHRIVASTAVA

## FULL STACK SOFTWARE DEVELOPER

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### OBJECTIVE

Getting an opportunity to enhance my learning by performing production oriented responsibilities in a growth centered organization.

### PROFESSIONAL SUMMARY

Full Stack Software Developer in the research group of one of the largest decision science companies. Working on research and development of high scale software solutions.

Have been practicing software development across various platforms. Been a part of projects on web engineering, automation, application software, big data, data science, mobile and more.

### EMPLOYMENT HISTORY

#### Developer – *Mu Sigma Inc.*

October 2015 – Present

Responsible for fostering research and development of projects around scalable architectures, application software, machine learning, algorithms, etc. in the Innovation and Development (I&D) team. Key duties include:

- Writing scalable mobile ready applications for Mu Sigma's analytics ecosystem
- Implementing algorithms using state of the art technologies
- Research and implementation of scalable architectures on big data frameworks
- Designing architectures of Mu Sigma's next generation products
- Training Mu Sigma's fresh recruits on new technologies

#### Technical Trainer – *NIIT Ltd.*

June 2015 – September 2015

Trained students on various domains including Java desktop, web, mobile, Python and Android.

#### Intern – *Eulogik*

June 2014 – July 2014

Worked on web technologies including CodeIgniter framework, Bootstrap 3 and Intel App Framework. Developed, tested and assisted designing live projects for the company. These projects included web 2.0 applications and hybrid HTML5 mobile applications.

### TECHNICAL SKILLS

Core Skills:

Programming Languages	Java, Python, Scala
Web Technologies	HTML, CSS, Javascript
Databases	MySQL, PostgreSQL

Additional Skills:

Data Processing	Apache Flink, Apache Spark, Kafka, MQs
Frameworks	AngularJS, Spring, Bootstrap
Reproducible Research	Jupyter, Zeppelin, R Markdown
More...	Linux, git, BPMN

### MAJOR PROJECTS UNDERGONE

#### ENTERPRISE PROJECTS

##### Business Process Modeling and Deployment Framework – *Java, AngularJS, Spring, MySQL*

- Responsible for managing the full software stack - AngularJS, Spring and MySQL
- Literature study, design and implementation of dynamic Business Process Model (BPM) designing web application adhering to the BPMN 2.0 standard using Activiti BPMN engine
- Enabled configurable connections to remote machines to run business process models remotely
- Worked on implementing custom activities to run programs (R, Python, Shell) within the business process models. Wrote behaviour classes, XML definitions and integration models for these activities

- Implemented file system workspace which enabled activities to use resources and scripts files stored both locally and remotely. Implemented the required features for workspace such as web sockets, queues, FTP pipelines etc
- Implemented versioning of workspace files using git
- Implemented validation of BPMN elements and thus reducing the chances of human errors while modeling. This helped the users save time as the bugs in their BP models could be pointed out at design phase rather than deployment phase

#### **Human Motion Tracking at Scale – *AngularJS, Python, Java, HTML5, Tensorflow, Dask, PostgreSQL***

- Full stack developer in Mu Sigma's scalable deep learning based human detection and tracking platform
- Responsible for:
  - Design and implementation of cloud friendly and scalable architecture of this platform
  - Optimizing the user experience by design and implementation of user friendly interface
  - Back end development, implementation of ML algorithms for computation
  - Implementing business process flows using BPMN platform
  - Build process and deployment automation
- Contributed in:
  - Reducing the overall time taken for training human detection model (End to End People Detection in Crowded Scenes - ReInspect) using distributed computing features of Tensorflow
  - Enabling the code to utilize multiple CPU cores and graphic processors for parallel processing
  - Distributing Multi Hypothesis Tracking (MHT) python code processing over multiple machines using Dask Distributed to enable real time human motion tracking
  - Implementation of MHT – Revisited algorithm in Python

#### **Real Time Algorithmic Trading Engine – *Scala, Java, Python, R, Apache Flink, HTML5, PostgreSQL***

- Design and development of real time algorithmic trading engine which can use mathematical algorithms to place a trade order on the New York Stock Exchange
- Development of a user interface to manage and visualize ticker data and the analysis. Design and development of a back end to support the architecture of this UI
- Implementation of convergent cross mapping (CCM) algorithm to detect causality and the relationship between pairs co-integrated of tickers. Prediction of stock prices with linear modeling on causal pairs of stocks
- Implementation of Recurrence Quantification Analysis over ticker data to determine recurring behavior of stock prices and to place trade orders accordingly
- Research on determining change points in stock prices over time using R packages. Implementation of dummy variable regression method to determine change points

### **ACADEMIC PROJECTS**

#### **Collaborative Development Platform (CoDevelop) – *HTML5, PHP, MySQL***

CoDevelop is a SaaS based project developed on HTML5, PHP and MySQL which gives the facility of real time collaboration to software developers. Developers can collaborate over a project on the cloud and work on it as if they are working together.

- Did full stack development for the project
- Designed and developed the user interface using bootstrap framework
- Developed back end operations of MySQL database
- Developed the server side application using PHP in an MVC based approach

#### **Vehicle Sharing Android Application (VehShare) – *Android SDK, PHP, MySQL***

An Android application which helps the users to find people to travel with, and thus helping them to share the fuel and meet new people. Users can register journeys or find other registered journeys and then contact each other to plan a journey together.

- Designed the user interface for the app
- Did front and development using the Android SDK and Java2SE
- Developed web interfaces for interaction of the app with remote database (JSON parsing)
- Designed the back end architecture of the app and implemented on MySQL database

## EDUCATION

Exam	Institute	University/Board	Year of Passing	Percentage of Marks
BE(CSE)	Radharaman Institute of Technology and Science, Bhopal	Rajiv Gandhi Technical University, Bhopal	2015	84%
HSC	Sharda Vidya Mandir, Bhopal	Central Board of Secondary Education, New Delhi	2011	73.6%
SSC	Sharda Vidya Mandir, Bhopal	Central Board of Secondary Education, New Delhi	2009	62.8%

## ACHIEVEMENTS

- Recognized by Mu Sigma for contributions in projects and research.
- Contributed in Tensorbox source code – Tensorflow implementation of ReInspect – Object Detection (Github pull request #78 on [Russell91/TensorBox](#) )
- Reported multiple bugs in [Activiti](#), [tensorflow](#) and other popular repositories which in turn resulted in resolving issues
- Awarded “Best overall performer in CSE” by Radharaman Institute of Technology and Science for year 2015
- Various awards in music competitions including Maffick (MANIT, Bhopal), Techfizz (OCT, Bhopal) and Patrika Consumer Expo competition of bands
- Various awards in blogging competitions at IndiBlogger blogging community
- Top 5% in CodeVita 2014 global programming contest organized by TCS

## HOBBIES

Rock and metal music, Cooking, Blogging