VARTIKA SINHA

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11 May 1991, New Delhi

Software Engineer | Data Science Engineer

EDUCATION

	Examination	Board/University	From Year	To Year	Marks (%)	
Graduation	Cumulative Performance Index	Guru Gobind Singh Indraprastha University	2009	2013	78.67	Full time
XII th	Senior School Certificate Examination	Central Board of Secondary Education	2008	2009	85.00	Full time
X th	Secondary School Examonation	Central Board of Secondary Education	2006	2007	93.67	Full Time

CERTIFICATIONS

Name Of Certificate	Institution	From Year	To Year	Marks (%)	
Business Analytics & Intelligence	Indian Institute Of Management, Bangalore	2016	2017	-	Part time
Certificate In JAVA Programming Language	Sun Education Services, NIIT	July 2011	August 2011	94.00	Full time

WORK EXPERIENCE

Compro Technologies, New Delhi   *June 2013 - Present*

Senior Software Developer

Projects:

MyELT | Online English Language Learning – National Geographic and Cengage Learning's e-learning platform. This LMS (Learning Management System) is used by many institutes across the world to teach English language.

ComproDLS – Learning ecosystem containing Experience Apps to create immersive learning experience. Includes learning analytics, social collaboration, competency based learning with adaptive personalization.

Responsibilities:

1. **Data Engineering and Analysis**
   - Writing and deploying data algorithms to generate monthly reports from SQL servers.
     Reports were written as a part of CRON jobs in JAVA. The task of the job is to fetch the data from SQL Server, then aggregate and transform the data. This data is written into a Excel by the application and uploaded onto instructor server.

   - Writing SQL queries to get data from reporting servers and creating Excel reports.
     These reports are created on demand of Business Analytics team. Where they request for certain numbers that represent user behavior, like average time spent on an activity. Then a huge amount of raw data is fetched from multiple databases using various SQL commands. The aggregation of the data is done in MS Excel. These reports help BA to analyze the behavior of students and success of a course.

   - Designing and integrating Google Analytics in the application. The aim of deploying Google Analytics was to track the behavior of users and health of the application under traffic. The main task was to identify the key indicators of user and system behavior. The data from Google Analytics is also used in conjugation with SQL reports to analyze a certain event that occurred in application.

2. **User Experience and User Interface Developer**
   - Creating responsive, rich and interactive user interface components/modules using HTML 5, CSS3, Bootstrap3 and JQuery.
   - Optimizing the network calls using the in-browser database, pouchDB.
   - Investigating latest libraries, frameworks and usability patterns.

3. **Application Backend Developer**
   - End-to-end development and coding of the major functionalities of the product. Hand coding the standards to be followed in the product.
   - Designing and implementing the integration of middleware with MySQL and Apache CouchDB databases
   - Developing REST web services for the product and designing JSON response of the APIs
   - Involved in maintenance of legacy codes in JAVA. Running and analyzing Java memory analysis, heap and thread analysis of production servers.
   - Implementation of message queuing using background threads.
   - Designing and implementing Single Sign On feature in MyELT.
   - Integrating the application with Amazon S3 storage using Javascript.
   - Creating web services in NodeJS for performing heavy background tasks.
   - Experience with the software development lifecycle (SDLC) and principles of product development such as installation, upgrade and namespace management.
   - Involved in the process of designing business model, workflow, rules and limitations of products.

National Informatics Centre, Govt of India   *June 2012 – July 2012*
Summer Intern

Project:
Inventory Movement and Tracking System – Designed and developed a system to digitize a manual process of keeping a track of all the hardware issued by NIC to various government departments across various states.

Responsibilities: Involved in designing the Entity-Relationship models for the database. Responsible for connection of application with the database. Coordinated a team of three and assign tasks to them.

ACADEMIC AND RESEARCH PROJECT

Predicting Agricultural Yield Using satellite data   *Dec2016 – April 2017*
Predicting area of cultivation of various crops in Andhra Pradesh using satellite images from Landsat8 and Sentinel. Our objective is to create a pipeline in python that will employ image processing, supervised and unsupervised image classification to calculate area under cultivation. A huge part of this project involves geo spatial analysis, where we need to layer the data collected from ground with the images from satellite. The data from the ground undergoes a lot of preprocessing in python GDAL and Javascript before it can be used as an input for classification. A suit of classification techniques are used like Convolution Neural Networks, Random Forests, K-means Clustering, Fuzzy C-means Clustering, Gaussian Mixture Models, and SVMs for land and crop classification. Unsupervised techniques will then be used to predict the yield of the region with more ground data on weather and soil moisture. Tableau and leaflet.js are used to visualize the crops being grown across various regions.

German Credit Data – UCI Machine Learning Repository
The German Credit Data contains data on 20 variables and the classification whether an applicant is considered a Good or a Bad credit risk for 1000 loan applicants.
Analytical approaches like Logistic Regression, Discriminant Analysis and Random Forest were applied to provide a rule for making a decision whether to approve a loan to a prospective applicant based on his/her profiles.

Digit Recognizer - MNIST database of handwritten digits
The goal in this competition is to take an image of a handwritten single digit, and determine what that digit is. Unsupervised classification methods like CNN and K-nearest neighbors is employed to predict the digit in the image.

SKILLS

Programming Languages	Libraries and frameworks	Tools
Java, JavaScript, Python, R, SQL and NoSql	AngularJS, Bootstrap, NodeJS, jQuery Pandas, matplotlib, Numpy, scikitlearn, Struts 1.1, D3.js, Hadoop	MsExcel, Tableau, Power BI

STATISTICAL ANALYSIS SKILLS

Statistical Analytic Techniques, Regression Technique, Time Series Forecasting Techniques, Optimization Techniques, Stochastic Models, Markov Chains, Random Forests, Neural Networks, Introduction to Video and Image Analytics

VOLUNTEER EXPEREINCE

Udayan Care - Volunteer/UI developer   *Feb 2016 – June 2016*
Worked with communications department in creating a reusable newsletter which is now being used as a template to send out monthly news of achievements and activities to benefactors.