

# Jayesh Kawli

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## CAREER OBJECTIVE

Seeking a full time position in software design and development field that will utilize my skills and abilities, and offer organizational and professional growth while being innovative and flexible

## EDUCATION

### **Indiana University**, Bloomington, IN

Master of Science in Computer Science

Cumulative GPA: 3.64/4.0

May 2013

### **Mumbai University**, Mumbai, India

Bachelor of Engineering in Computer Engineering

Cumulative GPA: 3.6/4.0

June 2010

## WORK EXPERIENCE

### **Indiana University School of Informatics and Computing**, Bloomington, Indiana

August 2012-May 2013

*Associate Instructor (Analysis of Algorithms)*

- Assisted Professor Paul Purdom for graduate level course Analysis of Algorithms
- Held office hours and doubt solving sessions

### **Hank's College Football Recruiting**, Bloomington, Indiana

July 2012-January 2013

*Web Developer (PHP, HTML, CSS, jquery, JavaScript, MySQL)*

- Developed a football players recruiting website as a platform for upcoming high school and college players
- Allowed players to upload their profiles and other recruiters to search for players with desired skills.
- Integrated functionality such as private messages exchange, building personal profile and Ajax based dynamic search
- Gathered strong professional experience with web based software and database development

### **Tata Consultancy Services**, Pune, India

August 2010-June 2011

*Assistant Systems Engineer (Banking and Financial Services)*

- Worked on problems and solutions related to DB2 and Mainframe system for Real Time debit card transaction system
- Gained in depth practical experience in project management by verifying functionality in test and quality analysis phase
- Gained advanced technical knowledge of Mainframes and DB2 by troubleshooting the various business issues and performance glitches in implementation
- Involved in strong communication and negotiation skill through interaction with managers and client

## Technical Skills

**Languages:** C, C++, Java, PHP, MATLAB, R, COBOL, Python, Perl, Ruby, JCL, JSP

**Platforms:** Microsoft Windows, OS/360, Linux

**Web Development:** HTML5, CSS3, JavaScript, Dynamic HTML, Ajax, JQuery, Google Web toolkit, Node.js

**Databases:** MySQL, Oracle9i, DB2, PL/SQL, SQLite

**Miscellaneous:** Apache Tomcat, JUnit, Mockito, Agile development, GitHub, Jenkins, Maven, Eclipse, NetBeans

## Related Coursework

Analysis of Algorithms, Distributed Systems, Advanced Database Management System, Computer Vision, System and Protocol Security and Information Assurance, Data Mining, Computer Networks, Database theory and Systems

## Academic Projects

### **Page Rank Algorithm (Java) – Sep 2012**

- Implemented sequential page rank algorithm to evaluate top 10 most important web pages from a set of 1000 URLs
- Developed parallel version of the page rank algorithm using MPJ to improve performance

- Analyzed behavior using SIGAR and ActiveMQ libraries on 2 million URLs situated on more than one distributed nodes
- Efforts of our team lead us to stand among top 3 project teams in a class

#### **Social networking website (PHP, JavaScript, HTML 5, CSS3) - May 2012**

- Developed a social networking website using Ajax, PHP and other web development tools
- Implemented chat and Private Messaging capability along with capability to friend and unfriend people
- Integrated website with many Facebook and Twitter based features
- Gained valuable insight regarding how simple programming languages can be utilized to provide excellent features

#### **RANSAC (Random Sample Consensus) algorithm (C++) - Mar 2012**

- Implemented RANSAC algorithm for Image stitching and Panorama Creation
- Project included extracting image features using 'Tomasi and Harris' corner detection algorithm
- Tested on different real world with successful results on a set of more than two images

#### **Geo Location detection from images (C++, MATLAB) - May 2012**

- Implemented and analyzed 'Geo location detection' algorithm to capture physical location from object shadows
- Experiment was based on a paper by Prof. Frode Erika Sandnes 'Determining the Geographical Location of Image Scenes based on Object Shadow Lengths'
- Successfully verified this algorithm at Bloomington, Indiana and achieved a significant statistical accuracy

#### **K-Means data clustering algorithm (C++) - Sep 2012**

- Implemented and analyzed K-means data clustering algorithm on 'Wisconsin breast cancer data'
- Used 10-fold cross validation method to verify its correctness on unlabeled data. Performed unsupervised learning
- Observed more than 90% accuracy on final classification result

#### **Naïve Bayes algorithm on fraudulent sales data (C++) - Nov 2012**

- Implemented and analyzed simple probabilistic Naïve Bayes data classification algorithm on fraudulent sales data
- Executed algorithm on more than 4 lakh input records with approximately 15000 training and 3.5 lakh test records
- Observed more than 90% final accuracy on final classification model by applying it on training data with known labels

#### **Port Scanner (C) - Oct 2012**

- Developed a simple port scanner with Full IPv4 and partial IPv6 support with PCAP - packet capture library
- Studied the interplay of various implementations of firewalls, transport protocols and operating systems
- Verified standard services such as SSH, HTTP, SMTP, POP and IMAP if they are indeed running on respective ports
- Added multi-threading support for faster implementation on multiple ports

#### **Depth Map Estimation from 2-D images (C++) - Mar 2012**

- Created a simple disparity and depth map for pair of 2-Dimensional images using Hidden Markov Model
- Disparity map was created for a given set of images using pixel window and minimizing sum squared error
- Depth map was built using Markov Random fields using bidirectional message passing technique between two neighboring pixels

#### **Web crawler and Document parser (Perl) - May 2012**

- Developed a web crawler to download and parse URL content using Perl regular expressions
- Stored URLs in MySQL database and iteratively added multiple of them as they were found on successive links
- Used similar logic to extract and store email ids from a group of input webpages

#### **Analysis of Open Flow Network (Network security) - Apr 2012**

- Wrote a survey paper to study, analyze and find any kind of vulnerability in the Open flow networks
- Analyzed the root causes of earlier attacks (DOS, Spoofing) - cause of a major network disruption using threat model

#### **Organizer**

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- Organized a PHP based inter team virtual tournament 'Lock, Stock and trade'
- Worked as an organizer in the intercollegiate Group Discussion event 'Walk the Talk'