

Anubhab Majumdar

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EDUCATION

- **North Carolina State University** Raleigh, NC
Master of Science in Computer Science; GPA: 4.00 August 2016 – May 2018
- **Indian Institute of Engineering Science and Technology, Shibpur** Howrah, India
Bachelor of Engineering in Computer Science and Technology; GPA: 8.83/10.00 July 2011 – May 2015

PROFESSIONAL EXPERIENCE

- **VMware** Atlanta, Georgia
Cloud Platform Engineer (Intern) || Windows Mobile Device Management May 2017 - August 2017
 - **Reset Password:** Developed feature for resetting password of non domain joined Windows devices from AirWatch console or API (moved to production)
 - **Device Status:** Developed API to track status of profiles and applications allocated to a device
 - **Bug Fixes:** Fixed bugs in API, controllers, models and UI (moved to production)
 - **Testing:** Developed integration tests using Specflow
 - **Agile Development:** Experience working in an agile development environment
 - **Technologies:** C#, .NET, Specflow and MsSQL
- **Deloitte India** Bangalore, India
Analyst July 2015 - June 2016
 - **Project:** Part of system integration testing team of a payment processing system, handling credit card transaction of 40+ banks
 - **Design:** Designed test cases for core functionalities like authorization and billing
 - **Development:** Implemented automated test suites in Product Inspector for core functionalities
 - **Management:** Managed allotting and tracking the progress of work in a team of five

TEACHING ASSISTANT EXPERIENCE

- **North Carolina State University** Raleigh, North Carolina
Graduate Teaching Assistant January 2017 - May 2018
 - **CSC 517:** Object Oriented Design and Development
 - **CSC 501:** Operating System Principles
 - **CSC 316:** Data Structures

PUBLICATIONS

- **Generation of Searchable PDF of the Chemical Equations segmented from Document Images:** *2016 ACM Symposium on Document Engineering || Vienna, Austria || September 13 - 16, 2016*
The paper suggests a novel method of using existing OCR system, pattern recognition technique, contextual data analysis and a standard LATEX package to generate the chemical equation in searchable PDF format.
- **Automated segmentation and classification of chemical and other equations from document images:** *Eighth International Conference on Advances in Pattern Recognition (ICAPR) || Kolkata, West Bengal, India || January 4 - 7, 2015*
This paper presents a novel method for segmenting and identifying chemical and any other equations in heterogeneous document images that may contain graphics, tables, text and the classifying them into two categories; chemical and non-chemical equations.
- **Nrityabodha: Towards understanding Indian classical dance using a deep learning approach:** *Signal Processing: Image Communication, Elsevier || Volume 47, September 2016 || Pages 529-548*
The paper propose deep learning based algorithms to identify body postures and hand gestures in order to comprehend the intended meaning of the classical Indian dance performance.

MACHINE LEARNING AND BIG-DATA PROJECTS

- **Deep Learning Projects:** Implemented a *Convolutional Neural Network* for object recognition; compared performance of Bag-Of-Word, *Word2vec* and *Doc2vec* text representation techniques for sentiment analysis of movie reviews; implemented *Deep-Q Network* to play Pong; compared word and character level model of English using deep *LSTM* networks. Projects coded using Python, Tensorflow, Gensim, OpenGym AI and Keras.
- **Model based Reinforcement Learning:** Applied *policy iteration* on records modeled as *Markov Decision Process* for planning course of treatment and devised web-based *visualization* technique to interpret the experimental results. Coded from scratch in Python using Numpy, Scipy, Pandas, h5py, sklearn and Matplotlib.
- **Distributed Web Crawler and Analytics:** Implemented a distributed web crawler capable of scaling across multiple nodes. The web crawler is efficient and fault tolerant, and in our experiments have shown high performance even with limited resources. Coded using Kafka, Zookeeper, MongoDB, Docker, URLLib, BeautifulSoup.

SYSTEMS PROJECTS

- **Key-Value Device Driver and File System:** Wrote an actual device driver for a simulated device storing key-value and a secure and high performance flat file system that can be accessed by multiple clients simultaneously for Linux. Wrote Kernel code using C and FUSE.
- **Access control and Routing simulator:** Implemented a *CSMA/CD* based medium access control scheme and *Dijkstra* routing protocol to deliver data between any pair of end nodes for a simulation time of 30 seconds in a virtual network. The packet movement and associated statistics are shown through a *web simulation*. Coded using python, Flask and JavaScript.

OPEN SOURCE PROJECTS

- **Badging System for Expertiza:** Added the automatic badge assignment feature to Expertiza, an open source project, wherein badges like topper and first submission are assigned to students. Coded using Ruby and Rails framework.
- **Integration test cases for Expertiza:** Contributed integration test case for suggestion_controller. Coverage increased by 0.4% because of the added test cases. Coded using Ruby and Rails framework.

ANDROID PROJECTS

- **HydrationApp:** Built an android app from scratch that tracks water consumption and reminds user to drink water. UI follows Material design principles. Coded using Android SDK & Java.

COURSEWORK

Graduate :

- Operating System Principles
- OO Design and Development
- Computer Networks
- Graph Theory
- Automated Learning and Data Analysis
- Artificial Intelligence II
- Data Intensive Computation
- Advanced Machine Learning

Undergraduate :

- Design and Analysis of Algorithms
- Data Structure and Algorithms
- Computer Architecture and Organization
- Artificial Intelligence
- Software Engineering

SKILLS

- **Proficient:** Python, C, Java, MATLAB, LaTeX
- **Familiar:** Ruby, SQL, C# and .NET, C++, PHP, Javascript
- **Technologies:** Tensorflow, Gensim, Numpy, Pandas, Scikit-Learn, Matplotlib, Scipy, Kafka, Zookeeper, MongoDB, AndroidSDK

LINKS

- **Personal** : www.anubhab.in
- **GitHub** : github.com/anubhabMajumdar
- **LinkedIn** : linkedin.com/anubhabMajumdar
- **LeetCode** : leetcode.com/anubhabmajumdar