

# Abhishek Singh Dhadwal

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## Summary

Result-oriented technical analyst researching and deriving insights in the fields of finance and digital healthcare. Proven ability to develop and deploy trading applications, investigating data driven medicine, and implement machine learning algorithms.

## Core Competencies

- |                 |          |                   |                       |
|-----------------|----------|-------------------|-----------------------|
| •Python         | •Git     | •Machine Learning | •SQL                  |
| •C#             | •Jenkins | •Data Analysis    | •Sybase               |
| •Java Core      | •Tableau | •Research         | •Software Development |
| •.NET Framework | •Pandas  | •DevOps           | •Computer Vision      |

## Experience

### Credit Suisse Services AG, Pune

#### *Exempt Non-Officer - Software Development, Investment Banking*

**07/2023 - 05/2024**

- Developed and managed a global order management system for Stocks, Futures, and Options within the Cash Equity business, ensuring precise execution to meet diverse client needs amid fluctuating market conditions.
- Managed deployments and modifications of trading services encompassing short sell order locators, compliance and administrative applications.
- Oversaw 85+ production level changes (RFCs) over two years, demonstrating expertise in C# and WinForms development along with database skills in Sybase and Oracle.
- Recognized with 2 RAVE (Recognizing Value and Excellence) awards for exceptional partnership, accountability, and contributions to project success.

### Credit Suisse Business Analytics, Mumbai

#### *Technical Analyst, Investment Banking*

**07/2021 - 06/2023**

- Created and revamped crucial daily ETL (Extract, Transform, and Load) jobs to fetch data from stock exchanges to the Credit Suisse Program Trading database, incorporated by traders to book and review trades.
- Interacted and coordinated with stakeholders across regions (US, UK, APAC) to discuss software requirements, design, and creation of automated reports based on C#'s .NET Core and the .NET Framework.
- Reduced ETL job creation time by 70% by templating and revamping legacy methods for the same.

### Visvesvaraya National Institute of Technology, Nagpur

#### *Student Researcher, Digital Healthcare*

**01/2020 – 01/2022**

- Conducted quantitative research towards the creation of a novel multimodal early detection approach for mental health ailments based on an end-to-end machine learning pipeline, under the guidance of Dr. Praveen Kumar.
- Designed remote sensing protocols for the collection of user smartphone data (via AWS S3 Buckets) and extracted high-level features for smartphone, audio, and visual data (using NumPy and Pandas) using Python.
- Optimized memory efficiency of data collection by 90% over the pre-existing methodology.
- Co-authored 2 internationally published papers on the topic, providing valuable insights into the approach's effectiveness for future researchers.

### The Apache Software Foundation, Remote

#### *Software Developer, Google Summer of Code 2019*

**05/2019 – 07/2019**

- Researched and implemented pseudorandom number generators for the Apache Commons open-source project.
- Accomplished the integration of LCG, Permuted Congruential Generator variants, and other generators into the commons-rng repositories, adopted by thousands of developers globally.
- Applied Java's Maven, JUnit, and JMH for project building and test suite creations for all 3 variants of generators.

### Credit Suisse, Pune

#### *Technology Intern, International Wealth Management*

**05/2020 – 06/2020**

- Collaborated on delivering Continuous Integration and DevOps solutions for the IWM Tech Department.
- Engaged in the deployment of Load balancers and OpenShift Clusters for cross-functional projects.

### Reliance Infrastructure (now Adani), Dahanu

#### *Internship Trainee, Central Technical Services*

**05/2018 – 06/2018**

- Designed innovative solutions in association with the Information Technology team to streamline web application development using JavaScript and the .NET Framework.

## Education

**Arizona State University**

**Master of Science, Computer Science**

Concentration: Biomedical Informatics

**2024-2026 (expected)**

**Visvesvaraya National Institute of Technology, Nagpur**

**Bachelor of Technology, Computer Science and Engineering, CGPA: 3.5/4**

**2017-2021**

- **Notable Courses:** Data Structures and Program Design, Software Engineering, Operating Systems, Neuro-Fuzzy Techniques, Database Management Systems, Introduction to Object Oriented Methodology, Design and Analysis of Algorithms, Theory of Computation.

## Research Publications

- Thati Ravi Prasad, Abhishek Singh Dhadwal, Praveen Kumar, and Sainaba. "A novel multi-modal depression detection approach based on mobile crowdsensing and task-based mechanisms." Multimedia Tools and Applications (2022): 1-34. Impact factor:2.75 (SCI) [\[link\]](#)
- Thati Ravi Prasad, Abhishek Singh Dhadwal, Praveen Kumar, and Sainaba. "Multimodal Depression Detection: Using Fusion Strategies with Smart Phone Usage and Audio-Visual Behaviour" International Journal on Artificial Intelligence Tools 2023 32:02, Impact factor:1.2 (SCIE). [\[link\]](#)

## Projects

### Indian Sign Language Translator

**Python, Computer Vision**

Capstone Project, Guide - Prof. Poonam Sharma, VNIT Nagpur

- Orchestrated and contributed to the development of an Indian Sign Language Translator to aid individuals suffering from hearing and vocal impairments. The project satisfied the following criteria - Near-Real-Time Application, Background independence, and Illumination independence. [\[doc\]](#) [\[code\]](#)

### Genetic Algorithm Implementation

**Python, Artificial Intelligence**

Artificial Intelligence - Course Project, Guide - Prof. U.A Deshpande

- Created an implementation of genetic algorithms for generating solutions of the Travelling Salesman Problem for a large fully connected graph (about 50 nodes). This project involved making fitness, crossover and randomized Euclidian distance functions, with simulators for evolution and graphing accuracy. [\[code\]](#)

### Comparison of Clustering Techniques

**Python, Data Science**

Data Mining and Data Warehousing - Course Project, Guide - Prof. Mansi Radke

- Applied clustering techniques like K-Means, BIRCH and Agglomerative Clustering (AGNES) on the US News and World Reports College Data for the generation of insights into the accuracy of clustering methods when bifurcating Private and Public colleges.

### Feature Segmentation via Multi-Res-U-Net Masking

**Python, Computer Vision**

Independent Project

- Researched an experimental implementation of MultiResUNet for facial feature segmentation using the CelebAMaskHQ dataset. The project aimed to utilize and discover the compatibility provided by MultiResUNet models, initially used for Medical Image segmentation, and check the feasibility of utilizing the aforementioned method in order to provide segmentation of facial features. [\[doc\]](#) [\[code\]](#)

### Resource Allocation within a Multi-Client Server

**Python, Distributed Systems**

Topics in Distributed Systems - Course Project, Guide - Prof. Poonam Sharma

- Implemented a program for allocating resources that makes use of a single server and can deal with simultaneous demands from a number of client apps. The project incorporated a wait-list queue and locked the resources until they are released by the client apps to maintain resources in sync with all clients.

### Kerberos Protocol Implementation

**Python, Cryptography**

System & Network Security - Course Project, Guide - Prof. Syed Taqi Ali

- User authentication and ticket generation were prepared using the Kerberos protocol between clients and servers to manage user accesses to services. A Key-Dependent Additive Cipher implementation was applied to encrypt the channels of communication between the client and the servers.

### Logistic Regression Classifier for Movie Reviews

**Python, Data Science**

Sentiment Analysis using scikit-learn - Coursera Course Project

- Created a model to categorize movie reviews (positive or negative) using the IMDB dataset. Utilized sci-kit learn for model creation and NLTK for feature extraction. Optimized model accuracy through hyperparameter tuning.

## Academic Achievements

- Sole recipient of the Award of Academic Excellence in a batch of more than 200 students, accompanied by the Ryan Star Award which was presented by the Ryan Group of Institutions in 2017.
- Achieved an All-India Rank 3682 in JEE Mains 2017 among 1.18 million students.

## Training and Certifications

### International Institute of Information Technology, Bangalore

#### Executive Post Graduate Program in Data Science

06/2023 – 06/2024 (Expected)

- Enrolled in a year-long WES recognized online Data Science certification focusing on machine learning, data visualization, and big data processing. Gaining expertise in Python, SQL, R programming, statistical analysis, and predictive modeling to solve complex problems, utilize data for informed decisions, and communicate insights effectively to stakeholders [\[Course Link\]](#)

### Gained certifications on the following subject matter via online education portals (MOOCs) –

- **Machine Learning by Stanford University (Coursera)** [\[Certificate\]](#) :  
*Instructor* - Dr. Andrew Ng  
*Topics covered* - linear regression, logistic regression, neural networks, ML system design, and dimensionality reduction using Principal Component Analysis.
- **Complete Python Bootcamp (Udemy)** [\[Certificate\]](#):  
*Instructor* - Mr. Jose Portilla  
*Topics covered* - Python concepts such as syntax, data structures, object-oriented programming, file handling and library utilization.
- **Data Analysis using Excel and Tableau (EntryLevel)** [\[Certificate\]](#) :  
*Instructor* - Mr. Nabeel Siddiqui  
*Topics covered* - data collection, cleaning, in-depth analysis using formulas, pivot tables, root cause analysis and Tableau for impactful visualizations.
- **Introduction to Psychology - Yale University (Coursera)** [\[Certificate\]](#) :  
*Instructor* - Dr. Paul Bloom  
*Topics covered* - neuroscience, human variation encompassing personality, language acquisition, cognitive and social psychology, developmental psychology and language acquisition.

## Extra Curriculars and Positions of Responsibility

### Technical Analyst - Credit Suisse

- Volunteered with the Antarang Foundation in 2022, assisting their 'CareerAware' and 'CareerReady' programs by coaching disadvantaged youth aged 14-25 in crafting compelling resumes and writing effective job application emails/cover letters to enhance their employability prospects.
- Appointed as a member of the India TA Committee in 2022 and tasked with leading and representing fellow analysts in various global forums.
- Worked in the Publicity and Marketing Team for Credit Suisse's Global Coding Challenge 3.0 and organized online outreach events across colleges.
- Published and edited articles as part of the TA newsletter Team for the 2021-22 Batch. Resulting newsletter publication ranked as "the most exceptional one to date" by global management.

### Student - Visvesvaraya National Institute of Technology, Nagpur

- Won the Street Play competition 'Halla Bol' as part of team Hunkaar in Aarohi'18, the cultural festival of VNIT, and obtained a cash prize of Rs.10,000/-
- Served as the Alumni Affairs Secretary for the Computer Science department in 2018-19.
- Compered the organization's flagship program and supervised multiple events as a manager for the Entrepreneurship Cell in 2018.

### Student - Ryan International and Cambridge School (High School)

- Elected to the school council 5 times, and nominated as Council President in the academic session of 2015-16'.
- Achieved the gold medal for literary writing amongst other accolades in the World Scholar's Cup Delhi Round, an all-round academic, cultural, and debate competition with over 500 students across 16 schools. Selected as one of two representatives from my school to travel to the cup's Global Round in Dubai.
- Attained the certificate of Social Work by Khushee - The World of Happiness foundation for contributions to the development of health, and education of underprivileged children in 2014.