

KARTIK VASUDEV SHENOY

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EDUCATION

University of Southern California

January 2021 – Present

Master's in Computer Science (Artificial Intelligence Specialization)

University of Mumbai, India

August 2014 – June 2018

Bachelor of Technology in Computer Engineering; Department Rank: 1

GPA: 9.56 / 10

EXPERIENCE

Barclays Global Service Centre, Pune, India

July 2018 – December 2020

Graduate Analyst, Barclaycard UK

- Designed a tweets sentiment analysis and classification engine which fetches tweets where Barclays accounts were tagged in real-time to enable quick response. Sentiment analysis and ontologies were used achieving an accuracy of around 90% in pilot runs.
- Devised a classifier application utilizing ML algorithm Latent Dirichlet Allocation to extract insights by generating ontologies from iOS and Android application reviews and customer complaints.
- Created a prototype fraud detection system to identify mule accounts by building a pipeline of Kafka queues, Cassandra DB and PySpark servers having an ensemble of ML models.
- Bagged the Barclays Award of Stewardship for automating the generation of real-time delivery metrics of more than 30 teams from Agile Central and Jira data sources. These dashboards have been saving around 150 man-hours annually.
- Deployed a system that helps in connecting the colleagues with available bandwidth and skillsets with the colleagues needing assistance, using AngularJS, Java, MySQL, saving more than 900 man-hours.
- Translated VISA, Mastercard scheme mandates into system code which processes millions of transactions every day.

Virtual Labs, Indian Institute of Technology, Bombay

March 2017 – August 2017

Web Development Intern, Team Leader

- Led a team of three to develop a [Virtual Lab](#) for the online demonstration of machine learning concepts such as neural networks, learning rules and optical character recognition. This lab has won the [Global Online Laboratory Consortium International Lab Award](#).

PROJECTS

VeriSign [[Demo Link](#)] [[Github Link](#)]

- Deployed an application to verify signatures by comparing with the original one and detect forgery.
- Achieved an accuracy of 96 % by training a Convolutional Siamese Network using the concept of One-Shot Learning.

Pneumonia Detection from Chest X-Ray Scans [[Github Link](#)]

- Trained a CNN on Chest X-Ray Scans with histogram equalization achieving 94.56 % accuracy and a recall score of 0.97.

Sign Language Translator [[Github link](#)]

- Managed a team of four to develop an Android application for recognizing Indian Sign Language used by the hearing- and speech-impaired. This is connected to a remote Python server.
- Extracted centroid contour distance curve of hand poses followed by normalization with FFT for feature-set generation.
- Trained HMMs for Gesture Recognition from gesture videos with 97.23 % accuracy and k-NN for Hand Pose Recognition with 99.7 % accuracy. Results published in a paper indexed by IEEE Xplore.

Feed-Forward Neural Network Implementation in NumPy [[Github link](#)]

- Implemented Neural Network Training using Back Propagation with Mini-Batch Gradient Descent, regularisation, variable momentum and learning rate annealing. Used this flexible implementation to train MNIST dataset achieving 96.81 % accuracy.

PUBLICATIONS / ARTICLES

- “Keystroke Dynamics Analysis and Prediction”, Towards Data Science, January 2021. [[Part 1 \(EDA\)](#), [Part 2 \(Model Training\)](#)]
- “LSTM Back-Propagation - the Math Behind the Scenes”, Medium, July 2020. [[Article Link](#)]
- “Real-time Indian Sign Language (ISL) Translation”, 9th International Conference on Computing, Communication and Networking Technologies (ICCCNT). Published in IEEE Xplore, October 2018. [[paper link](#)]
- “An Effective Pixel-Wise Approach for Skin Colour Segmentation - Using Pixel Neighbourhood Technique”, International Journal on Recent and Innovation Trends in Computing and Communication (IJRITCC), 2018. [[paper link](#)]

SKILLS

Programming Languages: Python, C++, Java

Machine Learning: TensorFlow, Pandas, Keras, Scikit-learn, NLTK, Spacy

Web: HTML5, CSS3, Angular4, ReactJS, JavaScript, PHP, NodeJS, Flask, Kafka

Database: MySQL, MongoDB, Oracle SQL, CassandraDB

Others: OpenCV, Numpy, Matplotlib

Tools: AWS (EC2, RDS, S3, EKS, Comprehend), Git, Firebase, Matlab, Microsoft Office, Confluence, Google Colab, Heroku

CERTIFICATIONS

- [Natural Language Processing with Classification and Vector Spaces](#)
- [Natural Language Processing with Probabilistic Models](#)
- [Natural Language Processing with Sequence Models](#)
- [Deep Learning Specialization \(Coursera\)](#)
- [Machine Learning \(Stanford Online\)](#)
- [Angular 2 \(Udemy\)](#)

EXTRA-CURRICULAR ACTIVITIES / ACHIEVEMENTS

- **Sir Dorabji Tata Trust scholarship** for securing 1st Rank in a class of 120 students during undergraduate studies.
- **‘Vice-President - Membership’** of Barclays Pune 2 Toastmasters Club (January 2019 - June 2019).
- Active member of Junior Chambers International Club – contributing to social service activities such as creating seed balls for afforestation in areas devastated by floods and blood donation.
- Taught basic computer skills of Microsoft Office to underprivileged students over a span of 10 days.
- **Placement Coordinator** during under-graduation, managing logistics for around 40 companies and 800 students.
- Indian Classical Music Level 3 certified singer and Harmonium player and a beginner guitar player.