HARDIK RUPAREL

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EDUCATION

Veermata Jijabai Technological Institute, Mumbai, India. (VJTI) **May 2019**
Secured a Bachelor of Information Technology with *Distinction* **(CGPA 8.66/10)**
Relevant Coursework: Artificial Intelligence, Machine Learning, Data Mining, Data Structures and Algorithms

PROFESSIONAL EXPERIENCE

UBS, Mumbai, India *Software Engineer* **July 2019– Present**

- Developing data loaders, processors and exporter using Java and PL/SQL for "Zeus"- a subsystem in the Credit-Risk function at UBS
- Working on the development of data processors using PySpark and Python as a part of Azure migration activity
- Designed, developed, and deployed a project- "Mock Interview Evaluator" in collaboration with Pratham, an NGO using Computer Vision and BERT to help underprivileged students prepare for job interviews by evaluating their mock interview videos and providing recommendation for improvement
- Created a Question-Answering system on the Credit-Risk logger data by implementing Elastic Search and BERT using Haystack and Farm libraries in Python

UBS, Mumbai, India *Software Engineer Intern* **June 2018– July 2018**

- Developed a configurable and a modular mobile gaming application called "Meri Dukaan" in collaboration with Pratham, an NGO, to inculcate financial literacy amongst youth using JavaScript, Handle-Bars, CSS3 and HTML5
- The application is being used by 65,000+ students across India and is planned to be launched in China and Singapore

OTB Consultancy Services, Mumbai *Application Developer Intern* **June 2017– July 2017**

- Revamped application user interface using Java and XML to make it more responsive, aesthetic and consistent based on the "three-click" rule to enhance user experience

PROJECTS AND PUBLICATIONS

Hindi to English: Transformer-Based Neural Machine Translation (Research Paper)

- Trained the Transformer model for translating the texts from Hindi to English using OpenNMT-tf library
- Performed various data cleaning and data pre-processing steps on IIT Bombay English-Hindi Parallel Corpus and then trained the model on the resulting 1.2 million parallel records
- Augmented the training data by adding 3 million back-translated monolingual WMT14 English News records
- Achieved a state-of-the-art BLEU score of 24.53 on the test data of 2400 parallel records
- Authored a paper on the same which has been accepted for publication in Springer book series "Lecture Notes in Electrical Engineering" (ISSN: 1876-1100)

GeoSharding: A Machine Learning-Based Sharding Protocol (Research Paper)

- "GeoSharding" is a sharding protocol aimed at optimizing the speed and scalability of the blockchain systems by sharding the network plane of blockchain by applying K-means on the geographical location of the miner nodes
- Designed a novel leader election algorithm to elect a leader node in each shard to enhance the speed of blockchain
- Published a paper on the same in Springer- Blockchain Technologies (DOI: 10.1007/978-981-15-4542-9_10)

Employee Attrition Rate Prediction

- Trained XGBRegressor and SGD Regressor for predicting the attrition rate of the employee using 22 input features
- Applied different feature engineering steps and achieved an accuracy of 81% on the test data of 3000 records

Malaria Detection using Transfer-Learning

- Fine-tuned InceptionV3, VGG16 and VGG19 models on the image data of the malaria-affected and unaffected cells
- Pre-processed the dataset using cv2 library to convert the resolution of the images to 48*48*3 resolution
- Generated additional images of malaria-affected cells by training DCGAN for 800 epochs on 1500 images of malaria-affected cells with a batch size of 32

Secure Voting for Democratic Elections: A Blockchain-Based Approach (Research Paper)

- Designed a novel and secure voting architecture with advanced security measures like multi-signature authentication and prevention of frequency analysis of hashes by leveraging the benefits of blockchain and cryptography
- Authored a paper on the same which has been accepted for publication in Springer book series "Lecture Notes in Electrical Engineering" (ISSN: 1876-1100)

TECHNICAL SKILLS

- Programming languages: Python, Java, PL/SQL, C++, MySQL
- Software and Methodologies: Deep Learning, Machine Learning, Blockchain, Git VCS
- Web Technologies: JSP & Java Servlets, JavaScript, JQuery, Bootstrap, CSS, HTML, XML

EXTRA CURRICULAR ACTIVITIES & MOOCS

- Completed the first three Deep Learning specialization courses from deeplearning.ai on Coursera
- Completed Tensorflow 2 and Keras Deep Learning Bootcamp from Udemy
- Volunteered for UBS CSR activity with Antarang, an NGO, to help students prepare for job interviews
- Successfully headed Badminton event at VJTI's sports festival- Enthusia that saw over 200 participants