ANKIT PAREKH

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EXPERIENCE

Software Engineer - Cloud, Data & Automation, and DevOps in IB Market Regulation Navi Mumbai, India
UBS Business Solutions (India) Pvt. Ltd. *Aug 2020 - Present*

- Leveraged multiple cloud services in Microsoft Azure in order to reduce operational costs by 30% and increase release frequency to biweekly. Built data flows and solutions to migrate these applications on the cloud using multiple Azure services like Azure Data Factory & Azure Databricks. Used Azure DevOps and Terraform to provision end-to-end infrastructure for built-in/migrated applications.
- Standardized TLS 1.2 & AES encryption across applications to address data-in-transit concerns. Set up application security testing jobs using Fortify SCA to reduce testing overhead. Dockerized applications to address production incidents.
- Designed and created efficient CI/CD/CT pipelines for automation of SDLC process and reducing time to production by 30 percent of 150+ Java repositories using Gitlab CI. Built 200+ Maven & Gradle jobs in Teamcity & Jenkins supporting 100+ developers in the process.
- Completed the End-of-Life RHEL 5/6 to RHEL 7 migration for 16 hosts and saving approximately 100K USD annually using the new infrastructure and configuration. Created time-bound alerting mechanisms based on multiple data-points in the incoming trade and report feeds by triggering Autosys jobs and designed ETL for multiple scheduled FX and Bond services using Shell, XML & Python scripting.
- Reduced manual steps in production releases by automating them with Shell and Python. Thereby reducing the release window by approximately 20%. Utilized in-house UBS Deploy deployment tool and designed puppet modules to reduce cumbersome releases to one-click deployments.

Research Assistant - Artificial Intelligence and Deep Learning Mumbai, India
Centre of Excellence in Complex Nonlinear Dynamical Systems (COE-CNDS) Lab *July 2019 - August 2020*

- Generated hyper-realistic Deep-Fakes through FaceSwap GAN and StyleGAN 2 using face swapping and other synthetic techniques. Created a composite dataset comprising of multiple open-source datasets and a custom dataset addressing issue of dataset shift using transfer learning.
- Worked on supercomputing platforms like NVIDIA-DGX1 and IBM Power System AC922 and trained XceptionNet model to detect Deep-Fake videos having multiple forgery techniques through a frame-by-frame approach and designed CNN-LSTM combination networks to incorporate temporal discrepancies between frames.
- Audio Deep-Fake detection was done by creating image and feature based datasets and training SVM, CNN and LSTM models. Conducted Feature Importance Analysis on various audio signal features to explore the correlation of individual features with audio authenticity.
- Presented the work in IEEE HIPC 2019 and OpenPower AI's Academia-Research-Industry workshop organized by the School of Information Technology, JNTU.
- Demonstration: Detection of AI Deep Fake, Deep-Fakes Detection for Facial Reenactment Manipulations & Tom Cruise Deep-Fake Detection

PUBLICATION & PATENTS

- **"Explainable Deep-Fake Detection using Visual Interpretability Methods"**, Publised in IEEE Explore
  3rd International Conference on Information and Computer Technologies (ICICT) held at San Jose USA, March 2020
  No. of Citations (as of 10 Nov, 2021) : 9
- **"System and Method for Detecting Deep-Fake Image & Video"**, (pending) Provisional
  Patent Application No. 202121026931 Date of Filing: June 16, 2021
- **"System and Method for Detecting Deep-Fake Audio"**, (pending) Provisional
  Patent Application No. 202121026913 Date of Filing: June 16, 2021

INTERNSHIPS

Summer Intern - IB Technology Navi Mumbai, India
UBS Business Solutions (India) Pvt. Ltd. *Jul 2019 - Aug 2019*

- Proof-of-Concept for GUI on Microsoft Azure - Deployed Securities and Settlement Engine GUI through Azure VM using Apache Tomcat for virtualization and migration to cloud. Containerization using Docker engine for GUI deployment as an agile and lightweight solution. Reduced the operational cost for hosting the GUI application by shifting the infrastructure from on-prem to cloud.

Summer Intern - Research & Development Pune, India
b,a,g Electronics (India) Pvt. Ltd. *Jun 2017 - July 2017*

- Topologies of LED Driver circuits - Analysis of parameters required for choosing a specific topology for driver circuit design. Conducted multiple tests like surge testing, EMI/EMC & shock testing to meet SELV industrial standard and approve production batches for distribution.

EDUCATION

B.Tech in Electronics and Telecommunications Engineering July 2016 - May 2020
Veermata Jijabai Technological Institute (VJTI), *affiliated to University of Mumbai* CPI: 8.51/10
Relevant Coursework: Pattern Recognition, Speech Processing, Blockchain Technology, Digital Signal & Image Processing, Data Structures, Data Compression, Computer Communication Networks, Microprocessors and Microcontrollers, Java

CERTIFICATIONS & MOOCS

Certifications: GitLab Certified CI/CD Specialist, Azure Developer Associate[AZ-204], Azure AI Fundamentals[AI-900], Azure Data Fundamentals[DP-900], Azure Fundamentals[AZ-900], Tableau Data Scientist, Introduction to AI in the Data Center **Coursera:** Deep Learning Specialization, Behavioural Finance, Getting Started with GKE, Introduction to the Internet of Things and Embedded Systems **Udacity:** Natural Language Processing Nanodegree

TECHNICAL PROFICIENCIES

OS/Platforms: Windows, Unix/RHEL, Microsoft Azure, Google Cloud Platform

Frameworks/Libraries: Pandas, Seaborn, Tensorflow, Keras, OpenCV, Matplotlib, Scikit-learn

Languages: C++, Java 8, Python 3, HTML5, CSS3, R, Scilab, LaTeX, PL/SQL, Shell/Bash/Groovy Scripting

Tools: Gradle, Maven, Fortify, Docker, Kubernetes, Terraform, Git, Jupyter, TeamCity, Jenkins, Gitlab, Azure DevOps

VOLUNTEERING EXPERIENCE

One Step Mentor - Antarang Foundation Aug 2021

- As a part of UBS's Corporate Social Responsibility, I was involved in guiding youth from underprivileged backgrounds who are not aware of career options available to them and struggle with finding employment. I have assisted them in their educational and professional pursuits by providing them information and sharing experiences.

Event Manager - VJTI Gymkhana and Enthusia Sep 2017 - Sep 2018

- Elected as the Event Manager for Enthusia Inter-college Table Tennis Event 2K17 with 15 teams and over 60 participants and Enthusia Intra-college Table Tennis Event 2K17 with over 70 participants in the campus. Arranged corporate sponsorship, handled accounts and budgeting, social media marketing and publicity. Coordinated getting appropriate permissions for premises from authorities and spearheaded a team of 7 to make the event a huge success.

Event Coordinator - VJTI Gymkhana and Enthusia Sep 2016 - Sep 2017

- Assisted event managers in their tasks in organizing the Inter and Intra college Table Tennis 2K16 with more than 150 participants. Arranging logistics for moving equipment, setting up the lighting for the arena, planning accommodation & handling registrations.

PROJECTS

CipherNet - NLP & Visual Cryptography Jun 2020

- Created a custom neural network comprising of a combination of text representational layers and convolutional layers to encode and decode text from image ciphers. Training was done using randomly generated images and texts so that the network could function with any type of image.

Optical Mark Recognition - Digital Image Processing Nov 2019-Nov 2019

- Created a multiple-choice scanner and test grader using OpenCV for multiple image processing techniques. Canny edge detection was used to extract the boundaries of the document. Contour detection and extraction was implemented to detect the questions and bubbles, & Four-point transform for bird's eye view.

Emotion Classification - Computer Vision & Deep Learning Jan 2019-Jan 2019

- Created a classifier for facial expressions by training a Convolutional Neural Network on the FER 2013 dataset which comprises of grayscale, 48x48 sized face images with seven emotions - angry, disgusted, fearful, happy, neutral, sad and surprised.

Employee Attrition Analysis - Data Analysis & Visualization July 2017

- Worked on IBM HR Analytics dataset and used on various Data analytics and visualization techniques. Predicted the attrition of employees based on number of features like satisfaction level, promotions, monthly income and many more using Random Forest classifier and AdaBoost classifier.