ANKIT PAREKH

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WORK EXPERIENCE

Software Engineer-DevOps & Cloud, *UBS* Navi Mumbai, India Aug 2020–present

• 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. Set up application security testing jobs using Fortify SCA and designed alerting mechanisms to reduce testing overhead. Dockerized applications to address production incidents. Additionally, setup load levelling, CI on-prem runners, and secure build pipeline using Enterprise Vault.
• 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. It involved moving 1000+ jobs using Autosys for workload automation. The project involved configuration setup of authentication mechanisms, DNS, LB, and incoming/outgoing traffic for various upstream and downstream jobs. Designed ETL for multiple scheduled FX and Bond services using Shell, XML & Python scripting.
• Leveraged multiple cloud services in Microsoft Azure in order to reduce operational costs by 30% and increase release frequency to biweekly. Used Azure DevOps and Terraform to provision end-to-end infrastructure for built-in/migrated applications.
• 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.
• Key Functional Responsibilities:
-- Responsible for SDLC automation & Risk Remediation through CI/CD & Cloud adoption with an objective of increasing development velocity.
-- Work with the development teams and the Application and Domain architects in designing and providing various solutions.
-- Design, code, test, document and implement release automation of projects as part of DevOps Team.
-- Work closely with Program Management and Quality Control teams to deliver quality software within agreed project schedules.
-- Proactively notify project leads of risks, bottlenecks & blockers.

Summer Intern, *UBS* Navi Mumbai, India Aug 2019–Jul 2019

• Proof-of-Concept for GUI on Microsoft Azure - Deployed SSENG GUI-GO-IT 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.

Data Analytics Intern, *TakenMind* Mumbai, India Jul 2018–Jul 2018

• Employee Attrition Analysis and Prediction - Worked on various Data Analytics and Visualization Techniques using Pandas, NumPy, Matplotlib, Bokeh and Seaborn.
• Predicted the attrition of employees based on number of features like satisfaction level, promotions, monthly income and many more with more than 94% accuracy using a Random Forest classifier and AdaBoost classifier.

Summer Intern, *B,A,G Electronics* Pune, India Jun 2017–Jul 2017

• Topologies of LED Driver circuits - Identification, industrial parameters and functionalities of electronic components used in a LED Driver and analysis of parameters required for choosing a specific topology for driver circuit design.
• Conducted multiple tests like surge testing, EMI/EMC & shock testing to approve production batches for distribution.

RESEARCH EXPERIENCE

A Deep Learning Framework for Generalized Deep-Fakes Detection under auspices of *COE-CNDS* Aug 2019–May 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.
• 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.
• 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

• Badhrinarayan M., **Ankit Parekh**, Faruk Kazi, **"Explainable Deep-Fake Detection using Visual Interpretability Methods"**, published in *IEEE Xplore - 3rd International Conference on Information and Computer Technologies (ICICT)* held at San Jose USA, March 2020.
No. of Citations until 21st July, 2021: **5** [Google Scholar Profile]
• **"SYSTEM AND METHOD FOR DETECTING DEEP-FAKE IMAGE AND 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

EDUCATION

B.Tech-Electronics and Telecommunication Engineering, *Veermata Jijabai Technological Institute* **CPI: 8.51** Jul 2016–Sep 2020
Higher Secondary Certificate (H.S.C.), *Pace Junior Science College* **87.85%** Jul 2014–May 2016
Indian Certificate of Secondary Education (I.C.S.E.), *Lokhandwala Foundation School* **95.17%** Jul 2013–May 2014

CERTIFICATIONS, COURSEWORK & 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
Coursework/Interests: Image/Signal/Speech Processing, Computer Vision, Pattern Recognition, ML, DL, NLP, Explainable AI
Udacity: Natural Language Processing Nanodegree
Coursera: Deep Learning Specialization, Behavioural Finance, Getting Started with GKE
Pluralsight: 200+ hours of training for technical skills spanning over 80+ certified courses & 15+ skill assessments

TECHNICAL PROFICIENCY

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, JavaScript, R, Scilab, LaTeX, Shell/Bash/Groovy Scripting
Databases: PL/SQL, Oracle, PostgreSQL
Tools: Gradle, Maven, Fortify, Docker, Kubernetes, Autosys, Terraform, Git/GitHub, Jupyter, TeamCity, Jenkins, Gitlab, Azure DevOps
Industry/Functional Knowledge: SDLC, Agile/Jira, Workload Automation, CI/CD/CT

VOLUNTEER EXPERIENCE

Event Manager, *VJTI Gymkhana & Enthusia* Sep 2017–Sep 2018
• Organized 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 success.

Event Coordinator, *VJTI Gymkhana & 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.
• Tasks included driving up the participation of all branches and forming teams with the aim of winning inter-college events.
• Arranging logistics for moving equipment, setting up the lighting for the arena, planning accommodation & handling registrations.

PERSONAL PROJECTS

CipherNet Jun 2020–Jun 2020
Created a custom neural network comprising of a combination of text representational layers and convolutional layers. Encoder converts a message with a maximum length of 256 characters into tokenized text and embeds it into an image. Decoder takes the encoded image and deciphers the tokenized text. Training was done using randomly generated images and texts so that the network could function with any type of image.

Optical Mark Recognition (OMR) 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 and Otsu's thresholding for foreground/background separation were used.

Loseless-Text-Compression-Techniques Mar 2019–Mar2019
Implemented Lempel-Ziv-Welch encoding for small skewed alphabet size by creating a sequence dictionary. Implemented Arithmetic Encoding and Huffman Encoding techniques with fundamental metrics like entropy, compression efficiency and compression ratio.

Emotion Classification Jan 2019–Jan 2019
Created a classifier for facial expressions by training a Convolutional Neural Network on the FER 2013 dataset which comprises of 35887 grayscale, 48x48 sized face images with seven emotions - angry, disgusted, fearful, happy, neutral, sad and surprised.

Peer-to-Peer Light Fidelity (LiFi) Jan 2018–Feb 2018
Studied various light sources and receivers possessing high switching frequency and low rise/fall time in the visible region of electromagnetic spectrum. Their compatibility with Arduino UNO board was analyzed and compared in terms of bit loss, current and light intensity. Basic prototyping was done using two computers connected to UNO boards to transfer character sequences and text data with light source as high switching frequency LED coupled with receiver as a linear photo-resistor (LDR).