ADITYA DIXIT

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Summary – I am a highly enthusiastic learner and I am looking for opportunities to work on innovative ideas. I am passionate about computer vision and machine learning. I sincerely worship hard work and my motto is "**Learn. Burn. Shine."**

ACADEMIC QUALIFICATION

- **2016-2018** **Master of Technology** in Communication System Engineering, **Visvesvaraya National Institute Of Technology, Nagpur, India.** CGPA – 7.48 /10
- **2011-2015** **Bachelor of Technology** in Electronics and Communication Engineering, **MNNIT Allahabad**, India, CGPA – 8.0/10

TECHNICAL SKILL

- ***Programming languages:***
  - ***Proficiency in:*** MATLAB, Python, CUDA, C, **TensorFlow**, **KERAS**
  - ***Familiarity with*** MATLAB , C++ and Tableau
- ***Computer Vision APIs:*** Matlab, Open cv with cuda, TBB (Thread Building Block)
  IP Hardware kit: Raspberry pi board, Da Vinci TMS, Arduino, Beagle bone, Adrauit
- ***Operating Systems:*** Microsoft Windows, Ubuntu
- ***Software Packages:*** AVR Studio, MATLAB, Keil C (Embedded C), Arduino IDE, Eagle CAD, KERAS(Python), Python orange, Jupyter
- ***Virtualization Server:*** VirtualBox
- ***Other Tools:*** Microsoft Office, Microsoft Excel, Microsoft PowerPoint

KEY PROJECTS, MAIN ROLES AND RESPONSIBILITIES

Algorithm Engineer, **Synaptics** **(June 2018 – till date)**
Project Name: **Matcher and Image processing team**
Role and Responsibility:

- **To perform automation of masking of fingers images for perfect matching** of the live images and stored templates.
- **Apply many to one matching scheme for matcher**
- **Designed algorithm for blurring to restore memory**
- **use Hydra for optimization of image processing algorithm in fingerprint analysis.**

Technology used : CUDA , TENSORFLOW, OPENCV,C, python and hydra

Research Engineer, **Jekson Vision Pvt. Ltd**. **(November 2018 – June 2019)**
Project Name: **Tablets Inspection System**
Role and Responsibility:

- **To perform color segmentation** of the tablets and apply deep learning model from scratch for their detection and instance segmentation.
- **To perform 2D Barcode ,Pharma code based on Fully connected network (FCN)** from scratch for detection using instance segmentation
- **use CUDA and TBB for efficient use of CPU and GPU .**

Technology used : CUDA , TENSORFLOW, OPENCV,C and python

Researcher / Sessional Academic/ M.tech Student, **Visvesvaraya National Institute of Technology, Nagpur, India**
VNIT NAGPUR **(July 2017 – July 2018)**
Project Name: **Spoof Invariant Face Recognition System**
Role and Responsibility:

- **Developed algorithms** for face Detection using improved Viola Jones Algorithm with Locally Constrained Coding (LCC)
- Apply a '**RESNET101 '** technique on the existing Face dataset and analyze the performance results.
- Achieved accuracy of **97.5%** and tested my system on raspberry pi model for **Assisting Visually Impaired Perso**

Technology used : CUDA , TENSORFLOW, OPENCV,C and python

Researcher / Sessional Academic/ M.tech Student, **Visvesvaraya National Institute of Technology, Nagpur, India**
VNIT NAGPUR **(July 2016 – July 2017)**

Project Name: **Abnormal Event Detection**

Role and Responsibility:

- **Developed algorithms** for detecting and localizing abnormal events such as skating and bicycling of the individuals in the crowded environment.
- Apply a '**Deep Learning'** technique on the existing dataset and analyze the performance results.

Technology used : TENSORFLOW, Python

Research Engineer, **ElectrocurieTech Limited (IIT Patna Incubation)** **(July 2018-October 2018)**

Project Name: Detection of Hypoglycemia using deep neural network

Role and Responsibility:

- **Developed algorithms** for extracting feature from raw ECG signal
- **Develop architecture using the principal of LSTM for extracting time domain feature from feature map**
- **Use SVM classifier** for classify hypoglycemic and tested my application in **IMS BHU and AIIMS Delhi in Real time**

Technology used : CUDA , OPENMPI, Python ,C

Research Worker, **Icubix Company Limited** **(October 2018 – October 2018)**

Project Name: **E hearing aid**

Role and Responsibility:

- **Based on Active Contour Segmentation technique**
- **It is an assistive gadget I built using Raspberry Pi for helping Deaf peoples with accuracy of 80%**

Technology used : CUDA , OPENMPI, Python ,Image processing , Matlab

Research Engineer, **ElectrocurieTech Limited (IIT Patna Incubation)** **(July 2018– October 2018)**

Project Name: **Cataract Detection System Using webcam**

Role and Responsibility:

- **Developed algorithms** for detecting pupil using **Active contour Method (Snake Algorithm)**
- **Develop algorithm for** detecting cataract using **Texture analysis (GLCM) and Specular Reflection Technique** as **Feature Extraction**
- **Use K Mean classifier** for detecting cataract and tested my application in **IMS BHU and AIIMS Delhi in Real time**

Technology used : CUDA , OPENMPI, Python ,C, TensorFlow, embedded c, image processing

Project, **ALLAHABAD UNIVERSITY** **(October 2014 – June 2015)**

Project Name: **Eye Controlled Wheelchair**

Role **and** Responsibility:

- Designed algorithm to detect eye from human face using **Hough transform**
- Interfaced webcam (MATLAB) with AT Mega 16 core at 15 frame per second .

Technology used : CUDA , OPENMPI, Python ,Image processing

Intern, **MNNIT ALLAHABAD** **(March 2014 – August 2014)**

Project Name: **Video Based 3D Human Activities recognition**

Role and Responsibility:

- Reconstruct human motions and gestures using a 3D model
- **correlation of silhouette and the 2D samples of 3D model**
- **To track a person on film (2D walker) and convert this information to a 3Dmodel**
- Use Principal of multicore programming using **CUDA** and **TBB**
- Extracts angles between different parts of the body with the chest and then employs these angles to reconstruct human subject movements. Vectorizing the computations for performance gain
- Achieved accuracies of around 90%

Technology used : CUDA , C ,Image processing

Intern, **Central Academy School** **(January 2013 – February 2013)**

Project Name: **Automatic Bus Stoppage Indicator And Parent A**

Role and Responsibility:

- **Design hardware module** and **extract** information **with the help of SIM908 and ATMEGA16 MCU**
- **Implemented in Central Academy School**
- **Device helps parents in positioning their child**

PUBLICATIONS

1) **Aditya Dixit**, Shashwat Pathak, March, 2014 "Real Time Patient Monitoring System" published in National Conference on Advanced Computer Communication and Embedded Systems (ACCES-II, 2014) at MMMUT, Gorakhpur. (Formerly MMMEC Gorakhpur) **ISBN No. 978938384237**
2) Aditya Dixit, March, 2015 "Performance Evaluation of routing Protocols for sending health care data over Wireless Sensor Network" published in (SCEECS, 2013) at MNNIT Allahabad. (IETE STUDENT CONFERENCE) **ISBN No. 878938382265**
3) Aditya Dixit, April, 2018 "PERSON RECOGNITION SYSTEM FOR ASSISTING VISUALLY IMPAIRED PERSON "published in (FEAST, 2018) at NIT TRICHY. (IEEE CONFERENCE)
4) 1 disclosure filed as **patent application on: Automatic Cataract detection System Using Webcam (201931016829)**
5) Aditya Dixit, V.R Satpute, Rajeev Tripathi, Sudarshan Tiwari,2018. **'SIFRS: Spoof Invariant Facial Recognition System (an assistive for visually impaired people)**".International Journal of Visual Computers–Springer (SCI Indexed), Status–(Under Minor Revision).
6) Aditya Dixit, V.R Satpute ,2018 "An Efficient Fuzzy Based Edge Estimation for Iris Localization and Pupil Detection in Human Eye for Automated Cataract Detection System". **International Conference on Communication** and Networking Technologies, Conference Number–43488 (Scopus Indexed), Status– Accepted for publication (Best Paper award)
7) 1 disclosure granted as inventor in **Spoof invariant face recognition for visually impaired person (201823216576)**

SCHOLASTICS ACHIEVEMENTS AND HONOURS

- **Bagged AIR 120 IN GATE 2019 (GATE SCORE :882 MARKS:66.33)**
- Bagged **AIR 1030** IN GATE 2017 (GATE SCORE :698 MARKS:50.90)
- Bagged **AIR 1873** IN GATE 2016 (GATE SCORE :614 MARKS:47.62)
- Bagged **AIR -8593** in IIT EXAMINATION (MARKS :239)
- Bagged **AIR -11050** in AIEEE EXAMINATION (MARKS :179)
- Qualified for Round 2 for top 5% of participating teams in International Level coding contest Codevita –2015 organized by **Tata Consultancy Services (TCS)** and secured a rank of 1151 across the globe in the competition
- Develop a desktop application on .NET framework with reporting tools & SQL server 2010 at back end for financial department of University of Allahabad. (LETTER OF APPRECIATION BY REGISTRAR)
- Bagged Second prize for "Assessment of Autism Spectrum Disorder in Toddlers using Speech Features" in Hackathon organized by IIT PATNA incubation in December 2017
- Bagged **First rank** in **CreateAthon** conducted by **internity** in September 2018.
- Bagged **First rank** in hackathon conducted by **Paypal** and **Godaddy** in august 2018.

EXTRA CURRICULAR ACTIVITIES

- Member of organizing committee of hostel fest Nirupan 2013.
- Technical coordinator of robotics club.
- Event Manager for the event "ELECTROBLITZ" in AXIS '16 (Tech fest of VNIT). "The event was 3-stage, testing practical knowledge of Electronics. Received participation of 150 students across Nagpur.
- **Technical coordinator** of **Training and Placement cell** (Technical coordinator2017-2018)
- Bagged **Gold** in Idea-Contest 2018 at zonal level (Nagpur region)

ACHIEVEMENTS

- Bagged **Silver** in QUIZ in technical fest NIRUPAN 2012
- Taught underprivileged children at **MUKTI** – an initiative by the student of our college to impart to the education to the underprivileged
- Qualified for final round for top 5% of participating teams in NIYANTRA (National Instrument) for project named '**Stick for blind people'**.
- eYRC-2013 IIT Bombay (Project Completed) ERTS Lab, Indian Institute of Technology, Bombay, License e-YRC-140328-28 (Fruit Plucking robot).
- Involved with the implementation of Wireless Telemedicine and automated detection of cataract in a heath camp at a village in Bihar under the guidance of Dr. Basant Kumar, Associate Professor, ECED, MNNIT Allahabad
- Completed courses related to deep neural network and machine learning

I hereby acknowledge that the information furnished above is correct to the best of my knowledge.

ADITYA DIXIT

10/14/2019