

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 (SCECS, 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 coordinator 2017-2018)**
- **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 health 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**