Aman Raj

Senior Undergraduate, Department of Electronics & Communication Engineering
Delhi Technological University (formerly Delhi College of Engineering)
https://www.linkedin.com/in/amanrajdce
amanrajdce@gmail.com | +91-8802288165 | +1-(412)3309184

EDUCATION

DELHI TECHNOLOGICAL UNIVERSITY (FORMERLY DCE)

B.Tech in Electronics & Communication Engineering
Expected May 2016 | Delhi, India
Aggregate: 78.57%
(2012-Present)

SPRING MEADOWS PUBLIC SCHOOL

Class XII, CBSE : May 2012 | Delhi, India
Aggregate : 95.0%
Class X, CBSE : May 2010 | Delhi, India
CGPA : 9.8/10

LINKS

LinkedIn:// **amanrajdce**
Github:// **amanrajdce**
Quora:// **Aman-Raj-8**

RELEVANT COURSEWORK

UNDERGRADUATE

Advance Engineering Mathematics
Probability & Stochastic Processes
Computer Vision & Image Processing
Control Systems
Microprocessor & Interfacing
Embedded Systems
Computer Architecture
Digital Signal Processing
Programming Languages
Data Structures and Algorithms

Udacity:
Introduction to Parallel Programming using CUDA

PROJECT & WORK EXPERIENCE

FPGA BASED ABANDONED OBJECT DETECTION

August 2014 – Nov 2014
- Designed a standalone system that uses Gaussian Mixture Model based algorithm for detecting abandoned objects at metro station. The algorithm was implemented using Xilinx FPGA ZYNQ-ZC702 board and VxWorks was used as RTOS.

3B BIOMETRICS SECURITY SYSTEM

May 2014 – July 2014
- Developed a system prototype based on BeagleBone Black for purpose of remote monitoring and authorizing access to Robotics and Machine Intelligence Laboratory in DTU.
- System was capable of sending a complete statistics of lab monitoring task to the lab-incharge on WhatsApp.

FACE DETECTION & TRACKING

Dec 2013 – Jan 2014
- Created a robust algorithm that combines SIFT and CamShift algorithm to detect and track human face in real time. The tracker correctly tracked face for more than 90 % of frames at 15 FPS on Intel core i5-2450M processor.

TEXT EXTRACTOR DEVICE

Aug 2013 – Nov 2013
- Developed a hand-held device that takes images from an on-board camera and extract texts from it using tesseract-ocr engine running on BeagleBone Black and shows the text on-screen with an accuracy of 92% .

RESEARCH

AIRLAB CMU | Research Intern

Jun 2015 – Present | CMU, Pittsburgh
Working with **Sebastian Scherer**, developing a deep learning algorithm for scene understanding and semantic classification of point cloud data for purpose of perception and path planning for a UAV.

IPTSE CMU WINTER SCHOOL | Research Intern

Dec 2014
Worked with **Prof. Bhiksha Raj** and **Pulkit Agrawal**, created **Comic Polyglot**, a neural network based system which converts comic strips of Spanish language into English version. Currently working to improve it.

ROBOTICS & MI LAB | Undergraduate Researcher

Aug 2013 – Present | DTU,India
- Completed many projects in computer vision, robotics & embedded system.
- Currently developing a CNN model for semantic segmentation of aerial images taken from an on-board camera of UAV. Integrated channel features are being used to train the developed network.

SKILLS

PROGRAMMING
Programming Languages:
C • C++ • Python • Matlab • Octave • Verilog • VHDL • LaTeX

Software/SDK:
OpenCV • Caffe • Qt • VxWorks • Xilinx Vivado HLS • Theano • Lasagne

DEVELOPMENT BOARDS
• Xilinx Zynq-7000 Video and Imaging Kit
• Intel Atom • BeagleBone Black
• Arduino Due • Raspberry Pie

SHORT TERM COURSES
Nvidia GPU Computing & CUDA Session
Training in BeagleBone Black
Robotics & Machine Intelligence

ACADEMIC INTERESTS
Artificial Intelligence including Machine Learning
Robotics Vision & Graphics
Neural Network and Algorithms
Natural Language Processing

COMPUTER VISION LAB | Undergraduate Researcher
May 2014 – Nov 2014 | DTU,India
Developed **HistExtract**, a system that extracts highly correlated text from historical inscription images with **Prof. Santanu Chaudhury** & **Dr. S.Indu** to aid archaeologists in their research of different civilization. Papers accepted in conferences.
- **ACCV–2014** "Enhancement and Retrieval of Historic Inscription Images", in proceedings of 3rd ACCV Workshop on e-heritage 2014", held in Singapore.
- **ICVGIP–2014** "Digitization of Historic Inscription Images using Cumulants based Simultaneous Blind Source Extraction", in proceedings of ICVGIP 2014, held in Bangalore, India

DTU-NASA LUNABOTICS LAB | Embedded Systems Designer
Oct 2012 – May 2013 | DTU,India
- Worked in a team and developed a variety of embedded solutions like design and fabrication of various electronic circuits,designing the telemetry system and the auxiliary systems for lunabot (lunar soil mining robot).

AWARDS AND ACCOMPLISHMENTS
- **Best Project Award** for the research project "Comic PolyGlot" in IPTSE CMU Winter School 2014.
- **First Prize** in **Paper Presentation** in Troika-2014, National Level Intercollegiate technical festival.
- **Award of Recognition** for contribution to DCE-DTU Alumni Association as Volunteer coordinator, 2014.
- **CSSS Scholarship 2012:** Awarded by CBSE to meritorious students for distinctive performance in All India Senior Secondary Examination.
- Selected for **Inspire Science Camp** organized by Department of Science & Technology, Govt. of India in 2011, only top 20% CBSE Class-X board toppers are selected.
- **Ranked 312** th in National Level Science Talent Examination (NSTSE) 2011, conducted by Unified Council, India.
- **Awarded Silver Certificate** in HDFC Bank Meritus Scholarship, 2009.
- **Academic Excellence Award** for the year 2009-10 & 2011-12, Spring Meadows Public School, for distinctive academic achievements.

POSITIONS OF RESPONSIBILITY

VOLUNTEER COORDINATOR | DCE-DTU Alumni Association
- Lead a team of 30 volunteers from **2013-Present** during **Annual Alumni Meet** - organized by alumni association every year.

EVENT & WORKSHOP ORGANIZER | DTU Student Council
- Conducted technical workshops **"Nvidia GPU Computing and CUDA Session"** sponsored by Nvidia Corp. India & **"Texas Instruments BeagleBone Black Workshop"** sponsored by Texas Instruments India.
- Organized **"Robosapien"** & **"Radix"**, intercollegiate technical events and have mentored freshman & sophomore students in more than 15 projects.