**Anshay Agarwal**

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Certificates: <https://anshay.github.io/certificates>

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**EXPERIENCE**

**GreyScaleAI**

Software Engineer | Bangalore | Feb 2021 – present

* Building complete food inspection solution using X-Ray camera, Computer Vision, Deep Learning and OpenCV
* Developed complete embedded UI – which is at the heart of all software api running on the machine riding the fast conveyor belts handling real time communication with hardware and software as well as user inputs
* Fixed more than 35 bugs within just 4 days with implementing new features and testing
* Implemented client for communication over MQTT
* Refactored complete code and improved build process using CMake
* Added googletest Testing and glog logging framework

**High Alpha Innovation (Canairy)**

Consultant | USA | Nov 2021 – Jan 2022

* Implemented segmentation of cattle using FPN network with 0.96 IOU and obtained cattle measurements on RGB & LIDAR depth images communicating over ROS channels
* Developed algo to recognize the incoming/presence/absence of cattle in RGB & depth images
* Label images with CVAT

**Nvidia Graphics**

System Software Engineer | Pune | July 2017 – July 2018

* Developed features on Tegra platform; debugging and fixing issues in the Camera Imaging pipeline and overall improvement of Imaging software stack
* Delivered more than 10 critical bug fixes on camera stack including lens shading, Cuda Histogram, etc. which helped in timely delivery of the products

**Defense Research and Development Organization (DRDO)**

Scientist | Dehradun, UK | August 2013 – June 2015

* Worked on reducing the vignette due to lens shading in Thermal Imagers (LREO and MREO) for night vision cameras used in military
* Delivered fixes for bore-sighting, noise and poor focus for Thermal Image enhancement of the images captured with LREO and MREO resulting in significant improvement in image quality
* Designed and constructed a Raspberry Pi based Thermal Imager controller for operating the Thermal Imager from a distance. This in-house development eliminated the need for procuring the controller from an external agency and reduced cost and development time

**North Delhi Power Limited (NDPL)**

Intern | Delhi | May 2011 – July 2011

* Worked on Operation and Maintenance of Grids and learned about towers, cables, SCADA panels, Smart grids and components of a grid

**SKILLS**

C++, Python, DeepLearning, ROS, MATLAB, 3D Modeling (Blender), CMake, OpenCV, PostgreSQL, Qt, Arduino, Coppeliasim(V-rep), Git, OpenVibe, KiCAD, Kotlin (Android Studio), CVAT,

Familiar with Unity Engine

**EDUCATION**

**MASTER OF TECHNOLOGY (M.TECH.)** Computer Technology

Indian Institute of Technology Delhi (IIT Delhi)

New Delhi | 2017

* Dissertation: Thermal Video Stabilization, which stabilizes a video captured through night vision camera
* Project on Brain Computer Interfacing which involved moving a cursor on the screen using Motor Imagery signals captured via EEG

**BACHELOR OF TECHNOLOGY (B.TECH.)**

Electrical Engineering

Indian Institute of Technology Mandi (IIT Mandi)

Mandi, HP | 2013

* Thesis: Automobile Collision Prevention System
* Founded Robotics Section of IIT and built 1st robot of IIT Mandi from scratch
* Member of Electronics Section
* Recipient of Merit Cum Means Scholarship

**CERTIFICATES / SPECIALIZATIONS**

**Entrepreneurship**

The Wharton School (2021-2022)

Wharton's Entrepreneurship Specialization covers the conception, design, organization, and management of new enterprises. This five-course series is designed to take one from opportunity identification through launch, growth, financing and profitability

**Deep Learning Specialization**

Deeplearning.ai (2018-2019)

Foundations of Deep Learning and understanding of Convolutional networks, RNNs, LSTM, etc

**Modern Robotics**

Northwestern University (2020-2022)

This Specialization provides a rigorous treatment of spatial motion and the dynamics of rigid bodies, employing representations from modern screw theory and the product of exponential formula and to apply these tools to analysis, planning, and control of robot motion.

**TensorFlow Developer Professional Certificate**

Deeplearning.ai (2019-2020)

A grounding to start with TensorFlow, detailing on understanding of loss functions, optimizers, convolutions, LSTM, etc.

**ACTIVITIES**

* Organized and managed workshop on Mobile Autonomous Robotics at IIT Mandi
* Workshop on Swarm Robotics at Thapar University
* Organized multiple events at Cognizance 2009 at IIT Roorkee

**ACCOMPLISHMENTS**

* GRE Score- 321/340 (170/170 in Quantitative)
* IIT JEE Rank - 3547 (~0.4 million students)
* GATE Rank - 423 (99.998 percentile) in Electronics and Communication
* Among top 0.1% students of India in XII board exams (AISSCE) in Mathematics (100%) and Computer (99%)

**PSYCHOMETRICS**

* MBTI INTJ-T: The Architect, Analyst, Constant Improvement
* ENNEAGRAM 6w5: "The Guardian = Loyalist wing Investigator"
* VIA CHARACTER STRENGTHS: 1 Creativity, 2 Honesty, 3 Perspective, 4 Good Judgment, 5 Curiosity

**ADDITIONAL COURSES**

**Robotics**

* Foundations of Robot Motion
* Robot Dynamics
* Robot Kinematics
* Swarm Robotics

**Neuroscience**

* Fundamental Neuroscience for Neuroimaging
* Medical Imaging technologies: MRI, fMRI, PET, CT, Ultrasound, XRay
* The Brain and space
* Synopses, Neurons and brains

**Self Driving Cars**