

# DHANANJAY AGNIHOTRI

AI Engineer | Computer Vision | LLM | RAG

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## SUMMARY

I am an AI Engineer currently pursuing a Bachelor's in Mechanical Engineering from IIT Bombay. My expertise focuses on computer vision, RAG and LLM. I have significant experience in developing AI models and leading projects, with a strong proficiency in Python and related technologies. I'm passionate about creating innovative AI solutions and enhancing machine learning frameworks

## EDUCATION

Bachelor of Technology (B.Tech)

IIT Bombay

08/2020 - 08/2024

## RESEARCH

Inscanner: Dual-Phase Detection and Classification of Auxiliary Insulation Using YOLOv8 Models

Soon to be published

2025 https://arxiv.org/abs/2502.18871

AI solution for missing insulation in construction blueprints

## EXPERIENCE

Senior AI Engineer

DoAZ

12/2025 - Present Seoul, South Korea

DoAZ is a technology company focused on AI solutions

- Enhancing existing computer vision models by optimizing architectures and data pipelines while researching and implementing innovative AI solutions for RAG and computer vision based applications

AI Engineer

DoAZ

06/2024 - 12/2025 Seoul, South Korea

DoAZ is a technology company focused on AI solutions

- Developed a computer vision model for detecting missing insulation areas in construction blueprints, optimizing data preprocessing, annotation strategies, and model architecture to achieve 95% accuracy
- Designed and implemented algorithms for detecting fire safety symbols using template matching, calculating floor areas in large construction blueprints, and extracting floor plan names using OCR
- Created data labeling guidelines and designed the model pipeline for the construction blueprint analysis

## POSITION OF RESPONSIBILITY

Vice Lead | Software Subsystem

Team Rakshak, IIT Bombay

06/2023 - 06/2024 Mumbai, India

Student organization focusing on robotics and AI competitions

- Leading a dynamic group of ten students alongside the lead and other vice lead in various competitions.
- Spearheading the training of team members in advanced deep learning models and computer vision skills.

Junior Engineer | Software Subsystem

Team Rakshak, IIT Bombay

05/2022 - 06/2023 Mumbai, India

Student organization focusing on robotics and AI competitions

- Researched about different CNN architectures such as YOLO, VGG, ResNet and Inception Network.

- Worked on alphanumeric and shape recognition models, and achieved an accuracy of 98.6% with VGG16.
- Represented IIT Bombay in SUAS international competition, organised by AUVSI, held in Maryland.

## PROJECTS

Neural Machine Translation

06/2023 - 06/2023

- Created a RNN model using Bi-directional LSTM with attention to translate human readable dates into machine readable dates, and trained using categorical crossentropy loss function and Adam Optimizer

Named Entity Recognition

06/2023 - 06/2023

- Fine-tuned a pre-trained transformer model to find and classify relevant information from a given resume
- Used DistilBERT fast tokenizer to standardizes the sequence length, and achieved the accuracy of 77%

Gesture Controlled Drone

06/2022 - 08/2022

- Created a Neural Network model for recognizing hand gestures utilizing the MediaPipe hands library
- Implemented python code for mapping drone controls and controlling drone using onboard camera feed
- Prepared a face detection model along with PID control system to direct the drone to follow command

Remote Controlled Plane

10/2021 - 10/2021

- Designed and crafted the fuselage, aileron and wings to give it an aerodynamic shape of miniature aircraft
- Optimized the performance and stability of flight by carefully considering some of the design parameters

## TRAINING / COURSES

Data Structures and Algorithms Specialization

Achieved expertise in designing, implementing, and analyzing fundamental data structures such as arrays, linked lists, trees, and graphs, along with advance algorithms on strings and graphs and their complexity

Google Data Analyst Professional Certificate

Achieved excellent understanding and proficiency of platforms like BigQuery for effective data analyses. Worked on SQL, spreadsheets, Tableau, and R for data cleaning and data visualization for better results

Deep Learning Specialization

Implemented YOLO algorithm for car detection, U-net for image segmentation and transfer learning on MobileNet along with some other models like ResNet, Inception in course programming assignments. Learnt about different RNN architecture like GRU, LSTM, Bi-directional LSTM and Transformers

## SKILLS

AWS	AWS Lambda	Data Structures
Deep Learning	Template matching	Keras
Transformers	Object Detection	Numpy
OpenCV	Python	Image Segmentation
Model Training	Vision transformers	GANs
TensorFlow	YOLO	PyTorch
LLM	OCR	