# Arnab **Dey**

MSc in Computer Science and Engineer

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## Summary

Specializing in artificial intelligence and software development. Strong technical, and interpersonal skills. Passionate about cutting edge technologies in the field of Deep Learning, Computer Vision, and Robotics. Interested in developing artificial intelligence-based applications.

## Work Experience

**Next Industries S.R.L.**                                                                                           *Milan, Italy*
Machine learning Intern                                                                                       *Jun. 2019 - Aug. 2020*

- Machine learning applications for wearable gesture & motion controller.

**UniCredit Services S.c.p.a.**                                                                                       *Milan, Italy*
Data Scientist Intern                                                                                        *Sep. 2019 - Mar. 2020*

- Design and implementation of end to end applications to automatize manual processes.
- Implemented an OCR web service with pre and post-processing modules to improve OCR quality.
- Worked on object detection, document classification, and entity recognition/extraction related projects.

## Education

**MSc in Computer Science and Engineering**                                                                        *Milano, Italy*
Politecnico Di Milano                                                                                                 *2017 - 2020*

- Specialized in Artificial Intelligence and Robotics
- Theoretical knowledge focused on AI, Machine learning, IOT, computer vision, and robotics.
- Practical projects like: "Art with computer vision", "Dancing robot", "Robotics with ROS and Gazebo", and "smart led network"

**B.Tech in Computer Science and Engineering**                                                                      *Kolkata, India*
West Bengal University of Technology                                                                                  *2013 - 2017*

With practical experience on software engineering and Image processing

**High School**                                                                                                   *Uttarpara, India*
Uttarpara Amarendra Vidyapith                                                                                          *2001-2013*

With A+ credit

## Skills

| | |
|---|---|
| **Programming** | Python, C, C++, MatLab, Octave (Proficient) |
| **Backend** | Node.js (Proficient); React/React Native (Intermediate) |
| **IDE** | IntelliJ; PyCharm; VSCode |
| **DevOps** | Docker, Git, AWS (Intermediate) |
| **Database systems** | SQL, mongoDB (Proficient) |
| **Robotics** | ROS, Arduino, Raspberry Pi, Gazebo (Intermediate) |
| **NLP tools** | NLTK, Gensim, Spacy (Proficient) |
| **ML, CV & DS tools** | MLflow, scikit-learn, OpenCV, pandas, scikit-image, Pillow (Proficient) |
| **Notebook** | Jupyter, Google Colab (Proficient) |
| **Depplearning tools** | Keras, PyTorch (Proficient); Tensorflow (Intermediate) |
| **Data visualization** | Matplotlib, Seaborn |
| **Soft skills** | Agile methodology; Team work; Business requirement analysis, Strategy making for goal oriented solutions |
| **Creative tools** | Adobe Lightroom, Adobe PremierePro, Adobe Photoshop |
| **Languages** | English (Proficient); Bengali (Native); German (beginner); Italian (Beginner) |

# Academic Projects

## THESIS

| | |
|---|---|
| 2020 | A. Dey, **Human activity and emotion recognition fromRGB videos using deep learning**. *Politecnico di Milano*, **Deep learning** based approach to recognize human activities and emotions from real-time RGB videos for robotics application, Implemented using **pytorch, tensorflow, Google Coral, and Raspberry pi.** |
| 2017 | A. Dey, **Automated region selection in images based on visual saliency**. *West Bengal University of Technology*, Achieved automated region selection without prior knowledge and user interaction, Implemented using MatLab. |

# Notable projects

### OCR web service

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- Implemented a configurable OCR web service for text extraction from scanned documents.
- Configurable image processing based pre-processing modules, configurable modules for different OCR engines, and Language sensitive word correction post processing modules.

### Stamp recognition and information extraction

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- Specific stamp recognition from scanned documents and date and time extraction.
- Implemented with Keras, scikit-learn, OpenCV.
- Manage to achieve 83% accuracy.

### Hand gesture recognition with RGB camera

INDIAN STATISTICAL INSTITUTE KOLKATA

- Human hand gesture recognition and replace mouse action with hand gestures for Linux system.
- C++, OpenCV, Xlib library for Linux.
- Achieve real-time performance with RGB camera.

### Grunge robot

POLITECNICO DI MILANO

- Designed a 40cm tall robot capable of dancing with music by moving arms, head and body.
- Manufacture parts with 3D printing.
- Audio signal processing and movement with 2 Arduino.

### NLP and data science projects

INDIVIDUAL PROJECTS

- **Winery(GitHub Link):** Data analysis and wine price prediction on Kaggle dataset.
- **Other projects(GitHub Link):** NLP, Python Automation, and data processing.

# Accomplishments

| | | |
|---|---|---|
| 2019 | **Developed official IOI mobile application,** The International Olympiad in Informatics | *Italy* |
| 2017 | **Fiction or Fact: Life in the United states and India organized by USIEF and FULBRIGHT,** Successfully completed the 8 weeks Network of Global Classrooms | *India* |
| 2016 | **Successfully completed a 12 weeks English Professional Development Program at the,** American Center, Kolkata | *India* |
| 2011 | **Awarded 'Ankan Bivakar',** recognition of merit in painting | *India* |