

# ANKIT AGARWALLA

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## EDUCATION

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|---|---|
| <b>Indian Institute of Management Bangalore (IIMB), Bangalore, India</b><br><i>Pre-Doctoral Research Fellow(Information Systems)</i>                        | <i>2022 - 2023*</i>   |
| <b>Indian Statistical Institute (ISI), Kolkata</b><br><i>Postgraduate Diploma</i><br><i>Applied Statistics with Specialization in Data Science (Online)</i> | <i>2022 - 2023*</i>   |
| <b>Jadavpur University (JU), Kolkata</b><br><i>Master of Technology in IT</i><br><i>(Courseware Engineering)</i>  | <i>2019 - 2021</i><br><b>CGPA : 8.57</b><br><b>Gold Medal</b> |
| <b>Maulana Abul Kalam Azad University of Technology (MAKAUT), Kolkata</b><br><i>Master of Science in Computer Science</i>                                   | <i>2017 - 2019</i><br><b>CGPA : 8.84</b>                      |
| <b>Maulana Abul Kalam Azad University of Technology (MAKAUT), Kolkata</b><br><i>Bachelor of Computer Application</i>  | <i>2014 - 2017</i><br><b>CGPA : 8.36</b>                      |

## RESEARCH INTERESTS

Image Analysis, Computer Vision, Pattern Recognition, Digital Forensics, Machine Learning, AI, Data Science, Natural Language Processing, Algorithmic Fairness, Privacy and Security, Misinformation, Computational Social Science, Human Computer Interaction, Education Technology.

## RELEVANT COURSEWORK

Artificial Intelligence, Image Processing, Soft Computing, Human Computer Interaction, Operation Research, Network Security, Mathematics for Computing, Data Structure and Analysis of Algorithm, Discrete Mathematics & Numerical Methods, Linear Algebra, Real Analysis, Statistics, Probability, Economics, Decision Sciences, Computer Network & Web Technology, Computer Graphics, Multimedia Technology, Information System Analysis and Design.

## RESEARCH EXPERIENCE

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|---|-------------------------------|
| <b>Indian Institute of Management Bangalore (IIMB), India</b><br>NSR Pre-doctoral Fellow<br>Area of Information Systems<br>Attend additional classes on Economics for Research, Mathematics for Research, Crafting Academic Writing, and software used in research like R and LaTeX.<br>Course: Managing Digital Transformation, Decision Sciences, Research Methodology.<br>Focus area of research: Responsible AI, Misinformation in social media, Algorithm Bias, Privacy and Security.  | <b>Apr 2022 - March 2023*</b> |
| <ul style="list-style-type: none"><li>• Privacy and security concerns in applications: Data Minimization, Localization, Transparency, etc.</li><li>• Misinformation and fake news in social media and their impact: corrective algorithm strategy adopted by social media firms – effectiveness, problems associated with it and developments of such algorithm.</li><li>• Algorithmic bias and related issues in specific fields such as Edu-tech, financial trading, recommender systems, social media platforms, healthcare, etc.</li><li>• Misalignments between ethical principles, or between those principles and practitioners' interpretations in developing responsible AI systems.</li></ul> |                               |

**Jadavpur University (JU), Kolkata**

**Aug 2019 - July 2021**

*Masters' Thesis – “A Novel Framework for Fruit Diseases Detection and Classification Using Image Analysis and ML.”*

- Develop a model using MATLAB that detects and classifies the different types of fruit diseases efficiently and accurately.
- A block-based approach is applied to find out the most affected portion with the disease in the fruit by calculating the Euclidean distance with respect to the reference image.
- Different statistical color features using color histogram technique and statistical measures of texture features from Gray-level Co-occurrence Matrix (GLCM) are extracted from the image dataset.
- The optimized feature required for fruit diseases classification is also reported, and it can be concluded that the combined feature of color and texture gives better results than when any individual feature is used
- The trained model successfully predicts classes or categories of different fruit diseases from the testing dataset for the unlabeled images with an accuracy of 86.7%.

**Jadavpur University (JU), Kolkata**

**Aug 2019 - July 2021**

*Independent Research - “Autonomous Data Digitization Using Computer Vision and Named Entity Recognition.”*

- This Project has developed an efficient and simple method of information extraction leading to data digitization from PDF invoices.
- The first block is referred to as the Conversion Block, as in this block, the conversion of PDF/JPEG data to raw text data takes place. The conversion process uses a computer vision technique using PyTorch library.
- The information extraction process is materialized using Named Entity Recognition Model, which is a popular NLP technique.
- For Text Detection, the model used a novel CONNECTIONIST TEXT PROPOSAL NETWORK(CTPN).
- For Recognition, the model uses a novel neural network architecture named CONVOLUTIONAL RECURRENT NEURAL NETWORK(CRNN), which is a combination of Deep Convolutional Neural Network (DCNN) and Recurrent Neural Network (RNN).

**MAKAUT, Kolkata**

**Aug 2017 - June 2019**

*Independent Research - “Vision Based Attendance System using Deep Learning Framework.”*

- This Project developed a model where human identification systems and the attendance system is combined and automated, which ensures employee adherence to leave and attendance policies.
- This Project applies deep learning techniques (MXNET, Keras) to Image processing.
- We used the MTCNN as a face detection algorithm, and a Face recognition Algorithm FaceNet is used.

**MAKUT, Kolkata**

**Aug 2017 - June 2019**

*Masters' Project – “Online Home Service Management System using the CodeIgniter framework of PHP.”*

- The online Home service website is mainly directed to browsing the web, viewing the latest announcement and list of services, list of service providers, viewing the contacts of the home service-based company, viewing the feedback of our clients, etc.
- I used HTML, CSS, and Javascript for Front End development and for Back End PHP-based framework CodeIgniter.

## **The Heritage Academy (THA), Kolkata**

**July 2014 - June 2017**

*Undergrad Project – “Simulation of Digital logic Gate using open-source tools.”*

- The Project developed a web-based application where students can learn the fundamental of digital electronics by hands- on lab experience of designing and implementing the logic circuits with the help of the embedded open-source tool.

## **PROFESSIONAL EXPERIENCE**

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### **Heritage Institute of Technology, Kolkata**

**July 2021 - March 2022**

*Designation – Assistant Professor*

- Course Instructor of Data Base Management System course of Undergrad Computer Application.
- Lab Instructor of DBMS of Undergrad Computer Application.
- Course Instructor of Image Processing course of Postgraduate Computer Science.
- Course Instructor of Basic Machine Learning course of postgraduate Computer Application.

### **Swami Vivekananda Institute of Modern Science, Kolkata**

**Jan 2020 - March 2022**

*Designation – Guest Faculty*

- Course Instructor of Relational Data Base Management course of Postgraduate Applied Mathematics.
- Course Instructor for Image Processing course of Postgraduate Computer Science.

### **Jadavpur University, Kolkata**

**August 2020 - June 2022**

*Designation – Teaching Assistant*

- Assisted and supervised Multimedia laboratory and ran a weekly Object-oriented programming (C++/Java) lab, which allows students to practice programming skills in a supervised group environment.

## **PROGRAMMING LANGUAGES AND SOFTWARE**

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### **Programming Language:**

C (till C99), C++, Java 14, MATLAB (Image Processing Toolbox 2019), Python (NumPy, Pandas, Matplotlib, PyTorch, Keras, sikit-learn, spaCy), R, ActionScript 3.0, Unix Shell Scripting.

### **Web Technology:**

PHP, MySQL, HTML, CSS, JavaScript.

### **Operating Systems:**

Proficient: Linux, Windows; Familiar: Mac OSX.

### **Other Skills:**

L<sup>A</sup>T<sub>E</sub>X, Excel, LibreOffice.

## **CERTIFICATIONS**

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CITI certificate: Social-Behavioural-Educational Researchers.

## **INTERSHIPS**

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- Web Development Intern at OgmaTechLab, Kolkata (Jan 2019 – May 2019).
- Web Development Intern, OgmaTechLab, Kolkata (Jun 2018 – Nov 2018).
- Web Application Development Intern on Ardent Computech PVT. LTD, Kolkata (Jul 2016 – Aug 2016).

## ACADEMIC ACHIEVEMENTS

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- Professor N S. Ramaswamy Fellowship (Pre-Doctoral Research).
- Fee waiver of INR 4.5 Lac for PGDAS (Indian Statistical Institute) as a Scholarship.
- University Gold Medal, M.Tech, Jadavpur University.
- Scholarship grant during M.Tech IT (CWE) by Force Power Infotech Pvt. Ltd.
- Institutional Scholarship (Master of Computer Science).
- Late Dayaram Poddar Scholarship for all-around performance during the last two years of Undergrad.

## PUBLICATIONS

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Pratik Ghosh, Ankit Agarwalla, "Classification of Birds Species Using Artificial Neural Network," International Journal for Research in Engineering Application & Management.

## LEADERSHIP EXPERIENCE

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- Assistant Placement Coordinator Jadavpur University; 2020-21.
- Coordinated IoT Workshop at Swami Vivekananda Institute of Modern Science.
- Coordinated Ethical Hacking Workshop at The Heritage Academy.
- Founder Member of Equality In Diversity (EID) club, The Heritage Academy.
- Cultural Secretary of Sobuj Sangha Club (S/1L44430 of 2007-2008), Palashipara, Nadia, responsible for organizing cultural activities such as drawing, quizzes, dance, handwriting, etc.
- Contributing member of Sobuj Sangha Club (S/1L44430 of 2007-2008), Palashipara, Nadia, for organizing a relief camp for COVID victims.

## EXTRA-CURRICULAR ACTIVITIES

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- Badminton – Represented my college team in the inter-college sports meet.
- Writing Poems in Bengali.
- Quizzing – Actively participated in several quiz competitions.

## REFERENCES

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**Professor Rajendra K Bandi**  
Professor (Information Systems)  
Indian Institute of Management, Bangalore  
✉ [rbandi@iimb.ac.in](mailto:rbandi@iimb.ac.in)

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Associate Professor (Public Policy)  
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