

Nishtha Agrawal

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Education

New York University, Courant Institute of Mathematical Sciences <i>Master of Science in Computer Science</i>	Aug 2023 - Present New York City, USA
BITS Pilani <i>Bachelor of Engineering in Electronics and Instrumentation, GPA: 7.61/10.0</i>	Aug 2017 - Jul 2021 Goa, India

Technical Skills & Relevant Courses

Languages: Python, SQL, C/C++, Java, HTML, CSS, JavaScript
Frameworks: Git, Linux, Keras, MATLAB, YOLOv3, OpenCV, TensorFlow, Numpy, Spring Boot, RESTful API, MongoDB, Kubernetes, Docker, Mockito, React.js, Vue.js, Grafana, Confluence, Jira, Lens
Relevant Courses: Object Oriented Programming, Computer Programming, Operating Systems

Professional Experience

New York University, Courant Institute of Mathematical Sciences <i>Graduate Teaching Assistant</i>	Sep 2023 - Present
HCI-VIS Lab, University of Massachusetts Amherst Website Link <i>Research Intern</i>	Apr 2023 - Aug 2023
<ul style="list-style-type: none">Explored the concept of the cooperative principle, i.e., Gricean Maxims, and implemented them in developing an appropriate chatbot for Parkinson's patientsDeployed Rasa chatbot, integrated with Alexa, to compare responses of our chatbot with Rasa chatbot and ChatGpt and derive valuable conclusions for research objectivesConducted extensive research on Natural Language Processing (NLP) techniques and methodologies to gain a deep understanding of the field and its applications in developing conversational agents	
Flipkart Website Link <i>Software Development Engineer, Recommendations Team, Search Experience</i>	Jun 2021 - Mar 2023 Bengaluru, India
<ul style="list-style-type: none">Achieved a 50% reduction in system latency by minimizing fetch calls and optimizing cache memory usage by 50%Acquired and applied tech stack including Aerospike, Elastic Search, and Spring Boot to effectively contribute to the development of functionality for recommendation systemsPerformed migration and rebase of Java 8 code to Java 17 codePersonalised the shopping experience of more than 20,000 customers per second by implementing Machine Learning algorithms like Logistic Regression, XGBoost, and Random ForestExecuted over 10 deployments utilizing Kubernetes, building Docker images in CI/CD pipelines, and implementing Helm Chart	
Shop 101 Website Link <i>Software Developer Intern</i>	Jul 2020 - Dec 2020 Mumbai, India
<ul style="list-style-type: none">Developed a user-friendly dashboard enabling users to visualize their payment history, while implementing secure login authentication through Redux state managementImplemented form validations and incorporated APIs into Shop 101's official website	
TamilNadu Science and Technology Centre Website Link <i>Research Intern</i>	Aug 2020 - Dec 2020 Chennai, India
<ul style="list-style-type: none">Employed NLP to impart Artificial Intelligence to device-antagonistic DialogFlow chatbot to support over 14 languages	
VenueMonk Website Link <i>Software Engineer Intern</i>	Jun 2020 - Jul 2020 Gurugram, India
<ul style="list-style-type: none">Coordinated in building React components for the official website of LimeChat, India's pioneering level-3 AI chatbot company, leading to seamless automation of the content systemUtilized Bootstrap to enhance browser compatibility and enhance mobile responsiveness for the official company website	

Research Projects

Object Tracking using Image Processing and Python

- Conducted analysis on the sample dataset utilizing **linear logistic regression** to create a comprehensive linear model and implemented **mean subtraction and band pass filtering** techniques to eradicate image noise
- Executed the **YOLOv3 model (A Deep Learning Model)** using the **TensorFlow framework**, accurately detecting the presence, positioning, and categorization of objects in a photograph
- Employed **OpenCV and Python** to access video metadata. Executed **Kernel-based tracking** to systematically examine video frames and produce target movements within the frames

Spirit Level Reaction Time Tester

- Developed a tester that aimed to test the sobriety of a person by featuring **two push-buttons** (START and STOP) and **nine LEDs** on a bar graph as a part of the user interface
- Setup random delays between the LEDs to measure the sobriety indicated by the number of LEDs lit up by the time user presses the STOP button
- Prepared the **prototype** for the design and removed any bias from the system by **generating a random number** which is used to start the process by **latching the value of the timer** from an internal clock

Hackathons

- The Amdocs W-Code Clan 2.0 Contest (**Ranked 77/6630**)
- Jumpstart 2020 by Publicis Sapient (**Ranked in top 500**)
- Code Diva Hackathon by ServiceNow (**Ranked in top 60**)
- Myntra HackerRamp (**Qualified first level**)

Voluntary Experience

AccioJob

Apr 2023 - Aug 2023

Course Instructor

- As a **Machine Learning and Data Structures and Algorithms** course instructor, I guide **200+** diverse students
- Supervised **40 software enthusiasts** on **ML, Data Structures and Algorithms** as well as **Software Development**
- Organized informative **resume-building sessions** and **mock interviews** on 1-1 basis

IEEE Bits Goa Student Chapter

Core Member

- Hosted and lead **Lumini**, the annual tech symposium, which provided a platform for students to interact with industry professionals and gain knowledge from respected researchers in various fields
- Conducted workshops, lectures and enhanced professional awareness within the technical community

Nirmaan Organization-Goa Chapter

Core Member

- Conducted free **educational lectures** and **mentored children** for the underprivileged sections of local communities to prepare them for the entrance exam of JNV, a public school that offers free education
- Organized free **medical checkups, informative sessions on menstrual health and hygiene** and conducted **free sanitary pad distribution**

Extra-Curricular Activities and Leadership positions

The Department of Photography

Coordinator

- The Department of Photography is among the largest student-body at BITS Pilani Goa Campus and is responsible for digitally archiving all the official and student activities on campus
- Managed a team of **159 members** capturing tech events and student festivals throughout the year
- Raised more than **INR 2,00,000** through various sources to purchase inventory

Dance Club, BITS Goa

Member