Rachit Agrawal

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Education

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI, IN
B.E. Computer Science | M.Sc. Chemistry (Expected 2021)
CGPA: **7.78/10**

Experience

SUMMER RESEARCH INTERN, NESAC(ISRO)
Umiam, IN, May 2018- July 2018

- Worked in the Remote Sensing Lab at North-Eastern Space Applications Centre under mentorship of Shri Nilay Nishant and Mr. Soham Mukherjee.
- Worked on the Research Project titled *Spatio-temporal analysis of urban sprawl of North-Eastern India using DMSP-OLS and VIIRS DNB night light data from 1992-2017*.
- Used various statistical models like GI* and CV along with various Image Processing techniques to determine the urban growth of capital cities of North-Eastern India.
- Tech stack - ArcGIS, R

Key Projects

CROSS LINGUAL DOCUMENT TRANSLATOR, Information Retrieval
Mentor: Dr. Lavika Goel, October 2019- November 2019

- Implemented IBM models on bilingual English-Dutch europal dataset in python and built a CLIR system to perform both English and Dutch query processing.
- Used ensemble techniques like Bagging and Boosting to improve translations and hence precision and recall of CLIR.
- Tech Stack - Python

SAFEMAPS, Android Application
Personal-Project, July 2018- September 2018

- Developed simple Android Application which provides a safer route between any given origin and destination.
- Determined the features which makes a route safer and ranked the routes based on predefined weights for each of the features.
- Tech Stack - Android Studio, Google Maps API, Google Places API

TURN TO TURN ROUTE RECOMMENDER SYSTEM, Artificial Intelligence
Mentor: Dr. Kamlesh Tiwari, November 2019- Present

- Working in AI/ML lab on MapMyIndia sponsored Project.
- Implementing and optimizing deep learning algorithms for retrieving route solely based on the preferences given by user.

OBJECT LOCALIZATION, Computer Vision
Personal-Project, February 2019 - March 2019

•   Added a 4th layer to ResNet-18 to return the coordinates of the bounding boxes.
•   Added a custom train generator in keras for very large datasets. This also increased accuracy from 85% to 90%.

Selected Coursework

Computer Science

• Information Retrieval
• Data Structures and Algorithms
• Database Systems
• Object-Oriented Programming
• Logic in Computer Science
• Operating Systems
• Image Processing

Chemistry

• Inorganic Chemistry(I,II,III)
• Organic Chemistry(I,II,III,IV)
• Physical Chemistry(I,II,III,IV)
• Chemistry of Materials
• Green Chemistry

Skills

Programming

C, C++, Python, Java,
SQL, R

Tools

Git, NLTK, ArcGIS

Achievements

• Achieved 99 percentile among 13 million students in the JEE (Joint Entrance Exam) - 2016.
• Recipient of university's MCN scholarship since each of the last four semesters for excellence in academics.
• Secured **First** position in Megathon 2018 (a hackathon organised by IIIT Hyderabad and IIT Hyderabad based on theme of *Women Safety*) at National level.
• Secured **First** position in [Paper] Presentation Event at APOGEE '18 (technical festival organised by BITS Pilani) at college level.

Extra-Curricular Activities

• *Safemaps* application incubated under PIED (Pilani Innovation & Entrepreneurship Development Society).
• Hobbies: Badminton and Table Tennis.
• Areas of Interest: Space Tech, BlockChain