

Ashish Upadhyay

PERSONAL INFORMATION

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Google Scholar: Ashish Upadhyay

INTERESTS

Artificial Intelligence, Case-Based Reasoning, Machine (& Deep) Learning, Natural Language Processing, Text Mining.

EDUCATION

International Institute of Information Technology, Naya Raipur, Chhattisgarh, India
B.Tech, Computer Science and Engineering, 2015 - 2019 (88.3%)

DAV Public School, Moonidih - Dhanbad, Jharkhand, India
Intermediate - AISSCE, 2013 - 2015 (93.8%)

Toolika Public School, Ghazipur, Uttar Pradesh, India
Matriculation - AISSE, 2011 - 2013 (9.8 CGPA)

TECHNICAL ABILITIES

- **Programming Languages:** Python (Full-Stack), R, SQL, Java, C/C++, JavaScript.
- **ML Frameworks:** NLTK, Scikit-learn, Pandas, Matplotlib, NumPy, OpenCV.
- **DL Frameworks:** Keras, Tensorflow.
- **ML Algorithms:** Ensemble Methods, Random Forest, Xg Boost, k-NN, k-Means Clustering.
- **DL Algorithms:** Convolutional Neural Nets, Recurrent Neural Nets, Long Short Term Memory.
- **S/W Development:** AWS, Flask, SQLAlchemy, PostgreSQL, React.js, Docker, ThingSpeak.

PUBLICATIONS

- Shrivishal Tripathi, **Ashish Upadhyay**, Shashank Kotyan, and Sandeep Yadav, “*Analysis and Comparison of Different Fuzzy Inference Systems Used in Decision Making for Secondary Users in Cognitive Radio Network.*” *Wireless Personal Communications* 104.3 (2019): 1175-1208. [\[DOI\]](#)
- **Ashish Upadhyay**, Kushashwa Ravi Shrimali, Anupam Shukla, “*UAV-Robot Relationship for Coordination of Robots on a Collision Free Path*”, *Procedia Computer Science*, Volume 133, 2018, Pages 424-431, ISSN 1877-0509. [\[DOI\]](#)

SCHOLARSHIPS

Studentship at RGU: £1231 per month to support my expenses during final semester internship.
Studentship at RGU: £1000 per month to support my expenses during summer internship.
Chief Minister Scholarship at IIIT-NR: Waiver of 1st year tuition fees of Bachelors degree.

INTERNSHIPS

Robert Gordon University (RGU), Aberdeen, United Kingdom

Information Extraction and Requirement Mapping from Regulatory Documents

Guide: Dr. Stewart Massie, Senior Research Fellow, CSDM, RGU

Dec 2018 - Jun 2019

- Worked on Information Extraction from Oil and Gas regulatory documents, classifying compliance requirements by priority and mapping them to a taxonomy of people and equipment.
- Implemented different Machine Learning and Deep Learning models using Scikit-Learn and Keras. Used different feature extraction techniques like TF-IDF and word-embedding.
- Successfully classified highly imbalanced datasets with high F1 score.

National Informatics Centre (NIC), Chhattisgarh, India

Pronunciation Similarity Matching using Deep Learning

Guide: Dr. Muneendra Ojha, Asst. Professor, CSE, IIIT-NR

Sep 2018 - Nov 2018

- Developed a Client-server model for pronunciation matching to be used by the students to improve their English pronunciation by practicing.
- Extracted the MFCC features from speech signal and converted the speech signal into a 2D image. Used that image to train a CNN model in Keras and Tensorflow.

Robert Gordon University (RGU), Aberdeen, United Kingdom
Application of Machine Learning and Optimization in Supply-Chain Management

Guide: Prof. John McCall, Head of CSDM School, RGU

May 2018 - Jul 2018

- Developed an algorithm for the automation of tasks for creating jobs of picking items from different places in Scotland and minimizing the number of trucks used.
- Developed an API using Flask and Vue.js. Used Sklearn and Pandas for implementing the Clustering and Bin Packing Algorithms.

Indian Institute of Information Technology & Management, Gwalior (IIITM-G), India
UAV-Robot Relationship for Coordination of Robots on a Collision Free Path

Guide: Prof. Anupam Shukla, Professor, ICT, IIITM-G

Dec 2017

- Developed an algorithm using A* and PRM for the coordination of multiple robots on a collision free path using the bird eye view of an UAV. [\[Published Paper\]](#).

**ACADEMIC
PROJECTS**

Twitter Sentiment Analysis of the Policies of Modi Government

- Used Distant Supervision for dataset creation. Collected around 1M tweets on the various topics like GST & Demonetization. Labeled them in three classes (positive, negative & neutral).
- Used Unigram technique for feature extraction. Used NLTK & Scikit-Learn. [\[GitHub\]](#)

Handwritten Character Recognition of Devnagri Letters using Deep Learning

- Recognized Handwritten Devnagri Characters using CNN on a dataset from [UCI ML Repository](#).
- Classified characters into 46 classes. Achieved 96% accuracy. [\[GitHub\]](#).

IIoT: Use of IoT in Petroleum Industry Automation

- Developed a system using different sensors and Raspberry Pi to automatically detect a hazardous incident in petroleum excavation pump.
- Used ThingSpeak as a cloud platform to store the data coming from various sensors.

Coordination of Intelligent Agents on a Pre-Defined Path using A* and PSO

- Developed an algorithm for multi-agent coordination using A* and PSO. Extended this project to implement the developed algorithm in real world. Simulated the algorithm in Gazebo. [\[GitHub\]](#)

Analysis of Different FISs used in Decision Making for Secondary Users in CRN

- Compared Mamdani and Sugeno FIS for 13 input parameters and 6 output parameters for different input and output Membership Functions using Fuzzy Logic.
- Mathematically proved the correlation between the different FISs. [\[Published Paper\]](#).

**EXTRA-CURRICULAR
ACTIVITIES**

- **Member of Core Team:** Technovate 2018 (Techno-Cultural Fest of IIIT-NR).
- **Member of Organizing Team:** Industry-Academia Meet 2017, IIIT-NR.
- **Head Organizer:** Connaissance 2016 (Literary cum Cultural Fest of IIIT-NR).
- **Member of Mess Committee:** Raman House, IIIT-NR (January 2016 - August 2017).
- **2nd Runner-up:** Breaking Bugs, Technovate 2017 (Code De-Bugging Competition).
- **Best Delegate:** Divya Jyoti National Youth Parliament 2017, Raipur.

REFERENCES

Prof. John McCall
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