Anumit Garg

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A final year Undergraduate
Electronics and Communication Engineering, NIT Jalandhar

EDUCATION

Bachelor of Technology	2016 - Present
NIT Jalandhar, Punjab	CGPA: 8.53/10.0 *(till 6th Semester)*
Electronics and Communication Engineering	

Senior Secondary – CBSE:	2016
R.A.N. Public School	Percentage: 94.8%
CBSE Board, Rudrapur, Uttarakhand	

Secondary – CBSE:	2014
R.A.N. Public School	CGPA: 10.0/10.0
CBSE Board, Rudrapur, Uttarakhand	

TECHNICAL SKILLS

Machine learning softwares and libraries: Jupyter notebooks, Tensorflow, Keras, Scikit- Learn
Programming: Python , C, C++, VHDL, MATLAB
EDA Tools: NI Multisim, LT Spice, Proteus, Xilinx Vivado

INTERNSHIPS

Indian Institute of Remote Sensing, ISRO | INTERN
April 2019 – July 2019
Dehradun (Uttarakhand)
➢ Developed a Hybrid CNN-LSTM based deep-learning model for the classification of Formosat-2 Multi-spectral Satellite Images.
➢ Presented research paper and documented findings in the Proceedings of *International Conference on Intelligent Computing and Remote Sensing* **(ICICRS 2019)**, C.V. Raman College of Engineering, Bhubaneshwar, INDIA (19-20 July, 2019).

Schneider Electric IT Business India Pvt. Ltd | INTERN
June 2018 – July 2018
Pantnagar, Rudrapur (Uttarakhand)
➢ Created the database and developed a software (TPM tool) for the efficient functioning of Spare Part Management.
➢ The Total Productive Maintenance (TPM) Management is an application dedicated for the maintenance and improvement of the integrity of production and quality systems through the machines, equipment, processes, and employees that add business value to an organization.

The Hi-Tech Robotic Systemz Ltd | INTERN
December 2017 – January 2018
Gurgaon, Delhi-NCR
➢ Worked with Hi-Tech Robotic team on their patented technology Novus Aware (*computer vision technology for monitoring driver's behavior and natural cues to infer whether the driver is in safe driving condition or not*).
➢ I worked with the hardware team to design, simulate, debug and improvise the circuit of the module to reduce the total power consumption and make the module compatible with variable power supplies.

RELEVANT PROJECTS

Hybrid CNN-LSTM model for classification of multispectral satellite images *April'19 – July'19*
(2019 IEEE International Conference on Intelligent Computing and Remote Sensing)
➢ Developed a Hybrid CNN-LSTM based deep-learning model for the classification of Formosat-2 Multi-spectral Satellite Images.
➢ The task was to develop a Hybrid CNN- LSTM model for the classification of pixels into corresponding classes (grassland, desert, water-body etc) and automate the process of classification of live satellite feed.
➢ Presented research paper and documented findings in the Proceedings of *International Conference on Intelligent Computing and Remote Sensing* **(ICICRS 2019)**

Concurrent Audit Automation Application *May'19 – July'19*
(Ernst & Young Risk Innovation Challenge)
➢ Developed software that can perform confirmation of Foreign Transaction deals and the underlying documentation in various formats as per the RBI guidelines.
➢ The application was developed using Optical Character recognition, Natural Language Processing, Google Cloud Vision API and Machine Learning Algorithms which can recognize text, perform entity extraction and verify the credibility of document.
➢ The software eliminates the need of transaction testers who are manually required to verify 1250-1500 documents with 12-15 attributes each.

Emotion analysis from multimodal temporal EEG signals using Merged LSTMs *February '19 – July'19*
(5th International Conference on Data Science and Engineering **(ICDSE 2019)***)*
➢ Proposed a novel methodology for emotion classification using multimodal temporal EEG signals.
➢ We used Discrete Wavelet Transform and statistics for pre-processing and feature extraction followed by Merged LSTM model to classify 4 emotions (valence, arousal, dominance and liking).
➢ The model achieved an overall accuracy of 84.89% on DEAP Dataset. The research findings were presented in the form of a research paper at, *5th International Conference on Data Science and Engineering* **(ICDSE 2019).**

Error estimation in trajectory of ballistic missile using Kalman Filter *August '18 – January'19*
(2019 IEEE International Conference on Innovations in Communication, computing and instrumentation)
➢ Proposed a Kalman filter based model for predicting the optimized flight state parameters (position and velocity in a three dimensional space) of a ballistic missile.
➢ Incorporated linearized Kalman filter to ensure the correct interception of the projectile that was distorted due to RADAR related errors.
➢ Presented research paper and documented findings in the in the Proceedings of IEEE *International Conference on Innovations in Communication, Computing and Instrumentation* **(ICCI 2019).**

Semi autonomous drone for agriculture *September'17 – May'18*
(DronEPIC Automation)
➢ Developed a semi-autonomous agricultural drone with seed dropping mechanism.
➢ The drone is equipped with GPS module and inbuilt camera which allows it to localize and plan the path using image processing and machine learning algorithms.
➢ The drone considerably reduces the time and effort in seed plantation and can be deployed on a large scale very economically.

(For projects and live demos, please visit: https://github.com/anumitgarg)

PUBLICATIONS

1. Anumit Garg, Ashna Kapoor, Anterpreet Kaur Bedi, Ramesh K. Sunkaria, "**Merged LSTM Model for emotion classification using EEG signals,**" in the proceedings of *5th International Conference on Data Science and Engineering* **(ICDSE 2019)**, IIT Patna, INDIA (26 to 28 September)
   (communicated)
2. Anumit Garg, Anil Kumar, "**Hybrid CNN-LSTM model for classification of multispectral satellite images,**" in the Proceedings of *International Conference on Intelligent Computing and Remote Sensing* **(ICICRS 2019)**, C.V. Raman College of Engineering, Bhubaneshwar, INDIA (19-20 July, 2019)
   (in press)
3. Anumit Garg, K.S. Nagla, "**Error estimation in ballistic missile trajectory using Kalman Filter,**" in the Proceedings of IEEE *International Conference on Innovations in Communication, Computing and Instrumentation* **(ICCI 2019)**, Easwari Engineering College, Chennai, Tamil Nadu, INDIA (23 March, 2019)
   (in press)

MASSIVE OPEN ONLINE COURSES (MOOCs)
➢ "*Python for Data Science*" by UC San Diego on EDx.
➢ "*Machine Learning Fundamentals*" by UC San Diego on EDx.
➢ "*Deep Learning Specialization*" by deeplearning.ai on Coursera.

LEADERSHIP AND EXTRACURRICULAR ACTIVITIES

LEADERSHIP ROLES:
➢ **Team Leader**: Participated in *Ernst and Young Risk Innovation Challenge* and was among top 10 national finalists in INDIA.
➢ **Institution's Innovation Council Member**: an initiative by Ministry of Human Resource Development (MHRD), Government of India to systematically foster the culture of Innovation amongst all Higher Education Institutions.
➢ **Secretary General in Model United Nations NITJ'18**: Led the secretariat and organized NITJ Model United Nations 2018.
➢ **Head- Student Mentorship Program**: Started student mentorship program and conducted preparatory sessions for juniors in the field of competitive coding, tech interviews and machine learning.

VOLUNTEER WORK:
➢ Active member of LADC (Literary And Debating Club)
➢ Participant of "*Swachh Bharat Mission*" which is a nation-wide campaign in India for the period 2014 to 2019 that aims to clean up the streets, roads and infrastructure of India's cities, towns, urban and rural areas.
➢ **DronEpic team member**: College team focusing to find the solution of problems faced by UAV industry around the globe.

INTERESTS:
➢ Philately
➢ Writing (Non fiction and Poetry)
➢ Debating (Model United Nations)
➢ Table- tennis