JAY RAJ SINGH

Second Year Postgraduate | Computer Science And Engineering
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ACADEMIC QUALIFICATIONS

I.I.T. KANPUR
M.TECH IN COMPUTER SCIENCE
July 2019 - Present | Kanpur,U.P.
CPI: 8.0 / 10

N.I.T. UTTARAKHAND
B.TECH IN COMPUTER SCIENCE
2018 | Srinagar Garhwal
GPA: 6.68 / 10

S.V.M. INTER COLLEGE, KASHIPUR
Uttarakhand Board (XII) 2014 | Kashipur
Percentage : 74.2%
Uttarakhand Board (X) 2012 | Kashipur
Percentage : 79.4%

COURSEWORK

GRADUATE
•Introduction Machine Learning
•Malware analysis and Intrusion Detection
•Machine Translation
•Cyber security of critical Infrastructure

UNDERGRADUATE
•Data structure & Program Design
•Analysis of Algorithms
•Artificial Intelligence
•Computer Vision & Image Processing

ONLINE COURSES
•Deep Learning Specialization by deeplearning.ai on Coursera
  • Neural Networks & Deep Learning
  • Convolutional Neural Networks
  • Sequence Models
•TensorFlow Developer by deeplearing.ai on Coursera
•Classification with Transfer Learning in Keras on Coursera

SKILLS

PROGRAMMING
Comfortable:
Python • C++ • C
Familiar:
Java • Golang • HTML

LIBRARIES & TOOLS
OpenCV • numpy • Keras
scikit-learn • pandas • cython

RESEARCH EXPERIENCE

GRAIN QUALITY & QUANTITY ASSESSMENT M.Tech Thesis
Supervisor: Prof. Nisheeth Srivastava   Jul'20 - present
Key participant in color-based quality assessment, working in a team of two on a research project applying Image Processing and Machine Learning techniques for classification of grains based on their quality, and to assess the quantity.
- Implemented an efficient features extraction algorithm for color-based quality assessment.
- Implemented a fast algorithm to find the length and breadth of grains used for shape-based quality assessment.
- Currently working on the segmentation of clustered grains using CNN and transfer learning.

COURSE PROJECTS

DECAPTCHA   Dec'19
Introduction to Machine Learning
- Solved CAPTCHA recognition problem using simple image processing and machine learning techniques.

MALWARE ANALYSIS USING DECISION TREES   Mar'20
Malware Analysis and Intrusion Detection
- Selected and extracted features from given static analysis and dynamic analysis data of malware and benign-ware.
- Two tree-based classifiers were trained using these extracted features, one for static analysis and other for dynamic analysis.

SECURE CLOUD STORAGE   Sep'19
Computer Systems Security
- Implemented a secure file storage client for a malicious server that ensures confidentiality and integrity of data stored on the server.
- The client, implemented in Golang, provides basic functionalities like adding users, file uploading, file sharing, etc.

SELF PROJECTS

DIGITAL IMAGE STEGANOGRAPHY   Jul'17
- Created a simple UI based application that hides a given text message inside the input image.
- A message of up to 1000 characters can be hidden in a 512×512 image.

SECURE IMAGE TRANSFER   Sep'16
- Two clients connect to the server, the clients can send text and transfer images to each other.

DIGIT RECOGNITION USING BACKPROPAGATION   Jul'17
- Created a simple UI based application that uses pre-trained backpropagation model to recognize drawn digits from the canvas area.

POSITION OF RESPONSIBILITY

TEACHING ASSISTANT   Jul'19-Apr'20
- Teaching Assistant for Introduction to Computing Course(ESC101).
- Mentored students & assisted them in their weekly labs, & evaluated their exams.