ASHOK AJAD

Machine Learning Engineer | AI Researcher

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EXPERIENCE

Quantiphi | Machine Learning Engineer
Mar 2018 - Present
- Designing and building impactful Deep-Learning solutions for business use-cases. Building deep learning models for images, videos and text data. Researching about the latest AI and DL techniques.

Nisin Technologies | Solutions Consultant and Algorithm Validation
Jul 2017 - Feb 2018
- Determines operational feasibility by evaluating analysis, problem definition, requirements, solution development, and proposed solutions.

IIT-ISM Dhanbad | Graduate Teaching Assistance [GTA]
Jul 2016 - Feb 2018
- Worked as a Subject Instructor in Computer science Subjects like Advance Algorithm and Data Structure, and Machine Learning

Rakuten | Software Engineer Intern
May 2017 - Jul 2017
- Determines operational feasibility by evaluating analysis, problem definition, requirements, solution development, and proposed solutions. Documents and demonstrates solutions by developing flowcharts, documentation, layouts, diagrams, code comments and clear code.

Life-UP Software | Software Developer
Oct 2013 - Mar 2016
- Part of the web developer and mobile application developer team. Developed application for android os based mobile and web. Documented user requirements and specifications for developing and maintaining the application.

RESEARCH AND PUBLICATIONS

Master Thesis Project | Content Based Image Retrieval
Jul 2016 - May 2018 IIT-ISM Dhanbad

Worked with • **Associate Prof. Arup Kumar Pal** and • **Associate Prof. Haider Banka** to identify the performance bottleneck affecting throughput using CBIR and studied approaches to design different motif patterns used in CBIR. Surveyed pros and cons of various motif patterns and different approach used in CBIR.
• Published 3 papers on CBIR under the supervision of • **Associate Prof. Arup Kumar Pal** and • **Associate Prof. Haider Banka**

Publications in pipeline:
- **Journal of Visual Communication and Image Representation - JVCI (ELSEVIER)**
  CBIR Using Multi-Level Coloured Directional Motif Histogram
- **Expert Systems with Applications -(ELSEVIER)**
  CBIR Using Six Directional Local Motif-Patterns and Novel Similarity Measure
- **Computers and Electrical Engineering -(ELSEVIER)**
  CBIR Using Two-Level XoR Patterns and Weighted Neighboring Similarity Scheme for Eight Directional Local Motif-Patterns

EDUCATION

Indian Institute of Technology
Dhanbad Jul 2016 - May 2018
M.Tech - Computer Science & Engg.
Research Area:
• Computer Vision
• Machine Learning
Teaching Assistant (TA):
• Machine Learning - CSC15806
• Data Structure - CSC13202
• Advanced Algorithm - CSC14204

National Institute of Technology
Agartala Jul 2009 - May 2013
B.Tech - Computer Science & Engg.

SKILLS

Machine Learning
• Linear and Logistic Regression
• Trees, Random Forest, Boosting Techniques • Clustering •Neural Networks
• Recommemnder System
• Convolutional Neural Networks
• RNNs (LSTMs and GRUs)
• Generative Adversarial Networks (GANs)

Programming & Frameworks
• Python • C • C++
• Data-Structure • Algorithm
• Tensorflow • Keras • Opencv
• Scikit-learn • NumPy • Pandas

Cloud Platform
• Google Cloud Platform (GCP) • AWS

COURSES [MOOC]

• Deep Learning Specialization. [Coursera]
• CS231n CNN for Visual Recognition. [Standford]
• CS224n NLP [Standford]
• Computer Vision ND [Udacity]

ACHIEVEMENTS

• Gate Qualified with 99.97%
• Gate score 617
• Runner up HackFest-2017
• Member of CSE Society.
• Activity Head of CSE event in AAYAM-2012.
• Activity Head of M.Tech Enlightenment club.

| Web-Portfolio-Link |

PROJECTS

DNA-Splice Gene Prediction

- Problem Statement: Splicing the gene based on DNA. Each DNA read is a sequence of four [C,A,G,T] types of nucleotides and needs to be converted into numerical representations for machine learning.
- Data-set : The domain consists of 60 variables, representing a sequence of DNA bases an additional class Variable. The task is to determine if the middle of the sequence is a splice junction and what is its type: Splice junctions are of two types:
  1. exon-intron (EI): represents the end of an exon and the beginning of an intron
  2. intron-exon (IE): represents where the intron ends and the next exon, or coding section, begins.

Quality Enhancement of Images Using GAN

- Problem of this project is that we have to build a model which makes it possible to generate HR-Images based on their LR-Images
- A deep-learning-based solution for the construction of a super resolution images. Trained the model on 200k LR-Images and the condition to be enhanced of LR-Images.

Monitor the Person Appearance

- Problem Statement: Monitor the person's attendance. Associate the faces with the existing employee database to identify each employee record the time stamp and date for each employee recognized
- Data-set : 100 hrs. Video footage for analysis and to build out model for monitor of person appearance.
- Output: The output of the analysis will be recorded in an csv file, which will record the person's id and the his/her time stamp and date
- Model – Algorithm used in this system:
  • Object Detection • Face-Recognition • Face-Tracking

Recommender System

- Problem of this project is that we have to design a recommender system for **male & female** based on their dressing style and face shape etc. For this project we have used the detection and classification model.
- Trained the model on huge number of label images for our detection and classification model and perform different operation on these detected images. Integrate the whole system in pipeline and create an API for user interface.
- Model – Algorithm used in this system:
  • Object Detection • Clustering • Classification •Recommender System (using Bi-Directional LSTM)

Data Warehouse System

- Problem of this project is that we have to design a scalable data warehouse system that contains various categories and classified image in that categories with no duplication and various different operation.
- Trained the model on more than 100k images for our data warehouse system and perform different operation on these images. Integrate the whole system in pipeline and create an API for user interface.