

Arunav Shandeelya

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RESEARCH INTEREST

- Deep Learning, Natural Language Processing, Generative Modeling, Meta-Learning

EDUCATION

International Institute of Information Technology Bhubaneswar Bhubaneswar, India
Bachelor of Technology in Electrical and Electronics Engineering with Minor in Computer Sc. and Engineering 2015-2019
Bachelor Thesis: "Courteous Response Generation in Task Oriented Multimodal-Dialogue System"

RESEARCH EXPERIENCE

Indian Institute of Technology Patna Patna, India
Research Assistant (AI-NLP-ML) LAB Jan 2019 - Dec 2019

- **Supervisor: Prof. Asif Ekbal** [↗] & **Prof. Pushpak Bhattacharyya** [↗]: Department of Computer Science, IIT Patna
 - * Worked in Multi-modal (Visual Dialog) systems for incorporating diversity using stochastic beam search. Proposed a Transformer-GAN based network in multi-modal(Visual-Dialog) response generation.

Indian Institute of Technology Roorkee Roorkee, India
Remote Collaboration July 2019 - Aug 2019

- **Supervisor: Prof. Vinod Pankajakshan**: Department of Electronics Engineering, IIT Roorkee
 - * For removing undesired pattern from pre-trained perceptual / Study and formulate a novel loss function derived from GAN based network for erasing the artifact in *Super Resolution* task.

International Institute of Information Technology Bhubaneswar Bhubaneswar, India
Research Practicum Aug 2017 - Dec 2018

- **Supervisor: Prof. Rakesh Chandra Balabantaray**: [↗]
 - * Worked on intersection of natural language processing and deep learning for various NLP task with specific areas including Text summarization, Information retrieval, etc.

PROJECTS

Attribute Centered Multimodal Response Generation in Dialogue System Research Assistant
Developer: Arunav Shandeelya, Stitha P. Pujari, M. Firdaus IIT Patna

Summary: Introduce a end to end architecture by combining Transformer and GAN network for attribute based multimodal visual dialogue generation. The proposed methods is compared with state of the art dialogue generation. The results shows that proposed framework is capable of generating coherent responses comprising of both text and images.

More to Diverse: Diversified Response Generation in Multimodal Dialog System Research Assistant
Authors: Arunav Shandeelya, M.Firdaus, Asif Ekbal, Pushpak Bhattacharyya* ACM TKDD (Under Review)

Summary: We propose a novel approach & techniques which helps for any goal-oriented conversational agents, to improve their system responses that will be informative, diverse ,leading to better user experience.

More to Perceptual in Super Resolution Remote Collaboration
Authors: Ravi Akella Tej, Arunav Shandeelya**, Shirsendu Halder **, Vinod Pankajakshan* IJCNN 2020 (Under Review)

Summary: Introduced a novel loss formulation derived from GAN based network in which discriminator network provides strong supervision to generator for erasing the artifacts generated from pre-trained perceptual loss function.Utilizing the latent features from the discriminator, we adaptively filter the unwanted information introduced by the perceptual loss.

Predictive Model for Extractive Summarization Research Assistant
Authors: D.K Sahoo,Stitha P Pujari, Arunav Shandeelya**, Rakesh Chandra Balabantaray* JIIS (Under Review)

Summary: Developed the predictive model for Extractive based Text Summarization by deletion through context categorization using concept of Stacked Recurrent Neural Network

INDUSTRY EXPERIENCE

PriceWaterHouseCoopers (PwC)

Kolkata, India

Technology Consultant Intern

May 2018 - July 2018

- * **Principal Consultant (Manager), Pratik Goenka:** Principal Consultant and Data Scientist
 - Worked & contributed in "Finance Cockpit" which translate the business performance into an Insight. Developed a machine learning prototype for forecasting price based on KPIs such as spend analysis, maverick spend, it also includes alert such as trend analysis, anomaly detection, etc. which navigate to better insight.

Xerox Research Center

New Delhi, India

Research Intern

June 2016 - July 2016

- * **Human Computer Interaction:** AI Search Engine for Videos and Scientific Articles
 - Worked with GoodEd Technologies (education startup) involves for *Content Development, e-Course Management*. Along with Xerox, involved with the team to work on AI based search engine.

MINI PROJECTS

- **Multi-class News Headlines Classification based on Genres:** Self Motivated
 - * Implemented a [CNN-LSTM] based classifier for Multi Label Classification.
- **Predictive Model for Stock Market Investment:** [\[Code\]](#)
 - * Crawled tweets and data from Marketwatch and NYSE of the recent market for Intra-day trading. Majorly data are from STOCKTWITS API for which gives tweets in real time along with past market trends.
- **Information Retrieval from Micro blogs during Disasters:** [\[Code\]](#)
 - * We present a system which analyses the emergency-related tweets to classify them as need and available tweets. Trained a multinomial & bernoulli naive bayes model which analyses emergency related tweets to classify them as need and available tweets.
- **Music Classification by Genres:** Prof. Abhijit Mustafi, BIT Mesra
 - * Developed a statistical machine learning approach for genre based music classification. train a network and compare the results between artificial neural nets and support vector machines. study features selection in audio such as MFCC, spectral centroid, etc. apply FFT algorithms for feature sampling.

SKILLS

- **Languages:** Python, C++
Other Languages: HTML5, CSS3, Shell, Git
- **Frameworks and Tools** PyTorch, Keras, Tensorflow, Scikit-Learn, NLTK, Jupyter, Google Colab
- **Open Source Framework:** FAIRSeq, open-NMT

ACHIEVEMENTS

- Ranked top **200** out of **5.5K** finalist of Mckinsey Analytics Hackathon organised by **Mckinsey & Company** [↗](#)
- Ranked **171/2000+** participant in **American Express** Machine Learning Hackathon on **HackerEarth** [↗](#)
- **Philips Data Science** Hackathon: 1st Round : Qualified (Technical MCQ Related to ML and Data Science), 2nd Round : Coding Hackathon (18th) Rank with a score of 96.3/100 out of 1300 [↗](#)
- **Global Alpha Researcher** Challenge by **Trexquant**, Achieved Rank 51 out of 7K participant across the world
- Secured **90%**ile in **IIT JEE**, a National Level Engineering Entrance Examination.
- Secured **AIR- 516** in *National Science Talent Search Examination*.

POSITION OF RESPONSIBILITY

- Senior Member, **Machine Learning and Data Science Group** at International Institute of Information Technology, Bhubaneswar, India. The motivation is to organize hackathons and deliver talk on latest machine learning and AI topics such as Attention Networks, GloVe, LSTM Networks along with research papers to students.
- Developed videos lecture with [Learner.in] for unprivileged students in computer science such basic data structures and algorithms, physics (Ray Optics) such as reflection, TIR effect. etc. Few videos are [\[Video1\]](#) [\[Video2\]](#) [\[Video3\]](#) [\[Video4\]](#) [\[Video5\]](#)

RELEVANT COURSE-WORK

- **Undergraduate Coursework:** Principle of Soft Computing, Assembly Language Programming, Object Oriented Programming, Internet and Web Technologies, Discrete Mathematics, Optimization in Engineering, Advanced Engineering Mathematics, Statistics & Probability, Signal and Systems, Microprocessor & Micro-controller.
- **E -Learning:** Deep Learning with NLP (CS224N), Machine Learning (CS229), Neural Network and Deep Learning [\[CERTIFICATE\]](#), Structuring Machine Learning Projects [\[CERTIFICATE\]](#).