HARSH KAG

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EDUCATION

Indian Institute of Information Technology,Allahabad — Prayagraj, India
Master of Technology - Information Technolog — *July 2022 - present*

University of Petroleum and Energy Studies — Uttarakhand, India
Bachelor of Technology — *July 2016 - July 2020*

Indore Academy — Indore(MP), India
Higher Secondary-M.P Board — *2016*

St. Mary's H.S School — Barwaha(MP), India
Secondary-CBSE — *2014*

COURSEWORK/SKILLS

- Data Structures & Algorithms
- Machine Learning
- Deep Learning
- Operating Systems
- Database Management System (DBMS)
- OOPS Concept

PROJECTS

- **Image Super Resolution using Generative Adversarial Network(GAN)**:
  SRGAN || (PyTorch, GAN, VGG-19)
  - Create an architecture for a Generative Adversarial Network (GAN) that is specifically based on the SRGAN (Super-Resolution GAN) model to produce high-resolution images from low-resolution input images.
  - Implement perceptual loss function, encompassing both an adversarial loss and a content loss, which drives the model's training process.
  - The inclusion of perceptual loss, utilizing the VGG19 network, helps SRGAN generate images with enhanced perceptual quality.

- **Analysis of Data Heterogeneity in Federated Learning Methods for Autonomous Driving System**:
  (FedAvg, UNet)
  - This project focused on implementing federated learning techniques to train machine learning models on heterogeneous driving data. Achieved improved model performance by leveraging the collective knowledge of distributed driving data sources.
  - Implemented FedAvg and Unet model to handle data heterogeneity effectively while prioritizing data privacy and maintaining data security in the context of federated learning methods for self-drive imaging data.

EXPERIENCE

- **Teaching Assistant - IIIT Allahabad**: Assisting the Professor in conducting lab sessions, invigilating exams, taking doubt sessions for the subject. (Sept 2022 - Till Now)

TECHNICAL SKILLS

- **Languages**: C, C++, Python
- **Frameworks**: TensorFlow, PyTorch, Keras
- **Developer Tools**: VS code, Google Colab

CERTIFICATIONS

- Linear Algebra for Data Science and Machine Learning Credential ID: VLFDURLYMU8T
- Calculus for Data Science and Machine Learning Credential ID: 847EP9QD4YML
- Supervised Machine Learning - Regression and Classification Credential ID: RCJE7URTFR2
- Unsupervised Learning, Recommenders, Reinforcement Learning Credential ID: JTN9VD279BRS

ACHIEVEMENTS

- Gate 2022 - 187 Rank - 96 Percentile
- Patent - Got Declaration as to Inventorship of Design analysis of an aircraft for short runway - Application Number: 202011031750
- Internship under Indian Air Force