Kulendu Kashyap Chakraborty

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Education

2019 - 2023 **GIMT, Assam Science and Technology University**, *Assam*, India.
Bachelor of Technology in Computer Science and Engineering (CSE)
CGPA: 8.18/10
Electives: Data Mining, Image Processing, Computational Geometry, Machine Learning, Neural Networks, and Deep Learning, Artificial Intelligence, Speech, and Natural Language Processing

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Experience

Feb 2025 - Present **AI Intern**.
AILusion
- Working on integrating Diffusion Models with virtual try-on pipeline.
- Building a video generation model for generating physically accurate, consistent, and realistic videos from just a single image.

Oct 2023 - Oct 2024 **Junior Project Attendant**.
Indian Institute of Technology Jodhpur (IIT Jodhpur) | PI: Dr. Avinash Sharma
- Engaged in the project titled "self-supervised learning of dynamic clothed avatars", where I am mainly exploring areas such as human body modeling, animation transfer, and more.

May 2021 – Dec 2021 **Research Intern**.
Cotton University | Collaborators: Dr. Kangkana Bora, Dr. Chandan Chakraborty
- Developed CNN architecture for classifying the leaf disease on potato plants. 97.895% accuracy for fine-tuned VGG-16 CNN architecture on the plant village dataset.
- Comparative assessment with pre-trained CNN architectures like: VGG-16, VGG-19, ResNet-50, and MobileNet, along with the fined-tuned variant of VGG-16.

May 2020 – June 2020 **Machine Learning Intern**.
Azure Skynet
- Developed algorithms and improvised diverse base-line machine learning and computer vision models, such as: classifying and recognizing handwritten characters, with MNIST dataset as the training set and achieving a decent accuracy on the testing set.
- Received appreciation & honored with a Machine Learning Intern certification.

Publications

- **"Automated recognition of optical image based potato leaf blight diseases using deep learning"**.
  Kulendu Kashyap Chakraborty, Rashmi Mukherjee, Chandan Chakroborty, Kangkana Bora
  Physiological and Molecular Plant Pathology, 119 (2022): 101781 [Paper] [Journal page]

- **"Semantic Segmentation of Brain Tumor on multi-band 3D volumes using non-uniform 3D U-Net"**.
  Kulendu Kashyap Chakraborty, Bishal Roy, Abhimanyu Kumar, Minakshi Gogoi. [PDF]

Projects

May 2021 - **Semantic Segmentation of Brain Tumor on multi-band 2D stacked volumes using non-**
June 2023 **uniform 3D U-Nets**, 7th *semester Academic Project work*.
Slides | Project Page
- Given a multi-band 3D scan of the brain (MRI scans), the aim is to semantically segment the Tumor from the volumized layers.
- Using 3D U-Net as the baseline architecture, all the pixels are semantically segmented to produce the masks for the provided MRI input.
- BraTS 2020 Challenge Data has been selected as the 'Benchmark Data' for analyzing & performing further operations.

Semantic Segmentation of Brain Tumor on multi-band 2D stacked-up slices using Attention-Based U-Net, 8th *semester Academic Project work*.
Slides
- Proposed a pipeline, which utilizes the attention-mechanism and perform segmentation on the provided multi-channel data.
- w/ techniques like bias-field correction and similar methods for sampling the training data, and pre-process them for refined feature extraction.

Aug 2022 **3D Shape Latents**, *3D Shapes and Neural Network*.
Project Page: https://github.com/kulendu/3D_shape_latents
- Inspection and detection of 3D shapes with Efficient Modelling.

Sept 2021 - **Assamese Dataset for NLG/NLU Tasks**, *Dataset collection and web scraping/crawling*.
Present Collaborators: Subrat Kishore Dutta, Saarland University, Germany
- Collected some good numbers of text data from heterogeneous genres.
- Implementing techniques for further aggregating those data into similar genres.

May 2021 **DrawIt**, *Canvas on screen using Geometrical Computations*.
Project page: https://github.com/kulendu/DrawIt
- DrawIt is a screen on air that allows you to write or draw anything while just waving your fingers over the screen.
- It uses complex computer-vision-based algorithms for detecting hand gestures and also uses different colors for making it more user-friendly.

Technical Skills

Langauge Python, Java, C, C++, JavaScript, Java
Frameworks Tensorflow, PyTorch, Keras, Flask, DJango, openCV
Developer Git, LaTeX, VS Code, PyCharm, IntelliJ Idea
Tools

Positions & Achievements

May 2023 **3D Vision Summer School, 2023**, Selected among very few undergrads from India..

Sep 2022 **HackZurich**, Selected as a Participant, build projects using Speech Detection using open APIs..

2021 **Assam Artificial Intelligence Initiative (AAII)**, Founding member & core contributor.

2021 **openSUSE Scholarship Recipient**, Program (Scholar) recipient for the Cloud-native track. 2021.

2020 **Bertelsmann Scholarship Recipient**, Recipient for the Bertelsmann Scholarship for the Artificial Intelligence Track, 2020., Learned about the importance of AI in the industrial sector, and how it contributes to rapid business growth.