

# Roy, Akash

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## EDUCATION

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**Government College of Engineering and Ceramic Technology**

*Bachelor of Technology in Computer Science*

Calcutta, IN

*Aug. 2018 – May 2022*

## TECHNICAL SKILLS

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**Languages:** Python, C/C++

**Web:** Django, Flask, TailwindCSS, Bootstrap

**Deep Learning tools:** Numpy, Tensorflow & Kears (sequential, functional and subclassing APIs), PyTorch

## RESEARCH, PUBLICATIONS

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**AKHCRNet**

June 2020

*Available on [ArXiv](#)*

- Developed AKHCRNet a state of the art deep learning model to classify bengali hand written characters. The model has about 96.12% validation accuracy which is higher than any other previous works.
- The AKHCRNet model uses a custom Inception like architecture and just took 11 epochs to fully train with a manually tweaked learning rate scheduler.

## PROJECTS

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**Tasks** | *Python, Flask, TailwindCSS, SQL, MongoDB*

October 2020 – Present(V2.1 is underway)

- Developed a full-stack web application using Flask as a backend and tailwind css for front-end styling.
- Implemented ORM from scratch in python to handle user login and signup logic. The signup and login information is stored in a SQLite3 database. User login state is maintained by flask sessions.
- User tasks data is stored in a mongoDB server located in AWS mumbai.
- Find the app [here](#)

**AKDSFramework**

November 2020 – Currently

- Pure pythonic implementations for all popular data-structures and algorithms
- AKDSFramework provides very easy to use APIs to quickly build and run algorithms on most of the popular data structures. AKDSFramework also provides one line [benchmark tools](#), easy to use [Big O analyzer](#), and also [caching decorators](#).
- From the data structure point of view this framework provides Linkedlists, graph, priority queues with min and max heap, queues, stacks, dictionaries and also a new sparse matrix representation data structure and from the algorithms point of view AKDSFramework provides most of the sorting algorithms, BFS, DFS, linear and binary searches and single source shortest path algorithms that run on our own graph data structures.
- I also built some internal recording tools to store state of the array when it's sorting for visualization purposes and an API to draw graphs from a AKDSFramework graph object and also wrote unit tests for all run-able programs and added a CI using github actions.
- See open source on [github](#) and [docs](#).

**DLF (Deep Learning as a Framework)**

February 2021 - Currently

*See open source on [github](#) and [docs](#).*

- Currently working on a deep learning framework that helps anyone to quickly start a deep learning project with just a single line of import then iterate over it.
- Provides popular loss function's keras and tensorflow compatible implementations for easier import into a custom deep learning pipeline.
- Provides popular deep learning models & many utility functions to quickly get started with a deep learning project.

**Other projects**

December 2019 - Currently

*See all projects that are not mentioned are [here](#)*

- [Multipurpose discord bot](#) with unique image related and fun features.
- [placeholderfile](#) is a random filename and UUID generator, Open Source [here](#)
- [theroyakashapis](#) is a quick starting point for small developers to get started with their app, completely free to use this provides a [news API](#), [Apple Music and YouTube API](#), [reddit API](#) and a Vision API with neural networks (although it's under maintenance mode).
- A free getting started python book that has 275+ 5-star ratings and 20K+ downloads, [See the book here](#).