

Project Design Phase -2 Technology Architecture

Natural Disaster intensity analysis and classification using Artificial Intelligence

Technology Architecture:

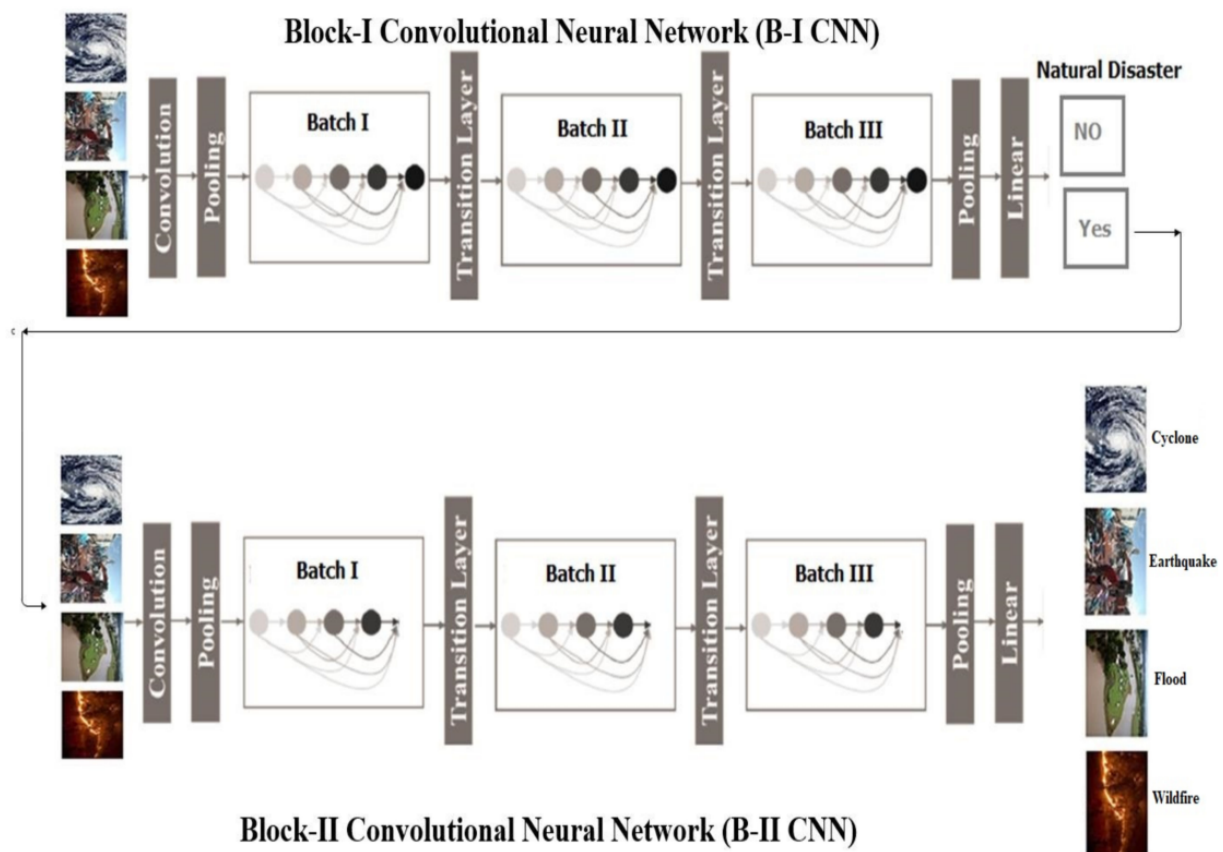


Fig 1: Technology architecture

Table 1: Components and Technologies

| S.No | Component | Description | Technology |
|------|-------------------------|---|--|
| 1. | Image processing | Dataset of satellite images of the particular area. | Python. |
| 2. | User Interface | Interaction of the application with the user. | HTML,CSS, JavaScript, ReactJS |
| 3. | Prediction of issue | The issue is predicted by various models. | Python. |
| 4. | Database | Data is stored as image and dataset. | MySQL. |
| 5. | Cloud Database | Database service on IBM Cloud. | IBM DB2 |
| 6. | File Storage | CSV files and image formats. | IBM block storage and local file system storage. |
| 7. | External API-1 | Google, web browsers and applications | IBM, Weather API |
| 8. | External API-2 | To know the current issue in the particular area. | Weather forecast |
| 9. | Machine Learning model. | Model to process the image and data. | Object Recognition Model |

Table 2: Application characteristics

| S.No. | Characteristics | Description | Technology |
|-------|-------------------------|--|----------------------|
| 1. | Open-Source framework | Jupyter, spyder, python, colab | Google |
| 2. | Security implementation | The client is the user and server is IBM | SHA-256, Encryptions |
| 3. | Scalable Architecture | Should be able to handle all workloads without consequences. | IBM Cloud |
| 4. | Availability | Availability of application to all the users. | IBM Cloud. |
| 5. | Performance | Application should perform correctly. | IBM Cloud |