PORTFOLIO

1. **Crypto Price Predictor:**
   We used time-series forecasting and attention mechanisms to predict the future price of bitcoin. We developed seven forecasting models from deep neural networks- to Bayesian network-based model with two forecasting tasks: 1) one-day and 2) long-sequence (up to 100 days) forecasting. In my part, I experimented with two deep learning-based forecasting models: one is recurrent neural network based (bidirectional LSTM) and the other is convolutional neural network based (Conv1D) for one-day forecasting task. I also did multivariate forecasting with both of these models.
   Tools used: TensorFlow, Pandas, Matplotlib
   Project Paper Link: https://tinyurl.com/cryptopredictor
   GitHub Link: https://github.com/bibekyess/AI_practice/blob/main/Killionaire.ipynb

2. **Paraphrase Generation Project:**
   We replicated the paper Quality Controlled Paraphrase Generation (Bandel et al., ACL 2022). My main part was to try out improvement approaches. First, I checked the empirical importance of QP (Quality Predictor) model by comparing the results of QCPG with and without QP. Secondly, I figured out a way to change the t5-base to multilingual mt5-base for training Korean dataset. Third, I wrote an end-end inference pipeline for paraphrasing from scratch.
   Tools Used: Pytorch, Matplotlib, transformers, Huggingface models
   Replicated Paper Link: https://tinyurl.com/qcpg-replication
   GitHub Link: https://github.com/bibekyess/QCPG

3. **Smart Home Project:**
   We did a security tech project where we detect any intruders and notify the house owner. In my part, I set up hardware (connecting the sensor to raspberry pi using breadboard) and my part was to manage the Node-Red workflow i.e connect each process to Telegram bot for automated response.

   Tools Used: Node-RED
   Demo Video: https://www.youtube.com/watch?v=YhccA0mm2YA
   GitHub Link: https://github.com/bibekyess/HomeSec

4. **Data Cleanup Project:**
   I contributed to data visualization, and webpage design while my teammate was assigned the task of data pre-processing.

   Tools Used: Python, Plotly, Pandas, Flask, Dash, Heroku
   Project URL: https://kingsmen-data-cleanup.herokuapp.com/

GitHub Link: https://github.com/bibekyess/data-viz-project

5. Lecture Summarizer Project:

I contributed in making documents, specifically Project Planning & Management Document (PPMD), Software Architecture Document (SAD) and System Testing Document. Around 80% of the part in these documents were done by me. In development part, I was not explicitly involved. From our team of 4 members, 3 of them specifically did frontend, backend and NLP part. I helped them in two issues, first one is converting the text to pdf (there was issue in formatting because of the absence of EOL character in the text format). Secondly, I managed the dependencies in project using conda and updated README to make our code work in Linux, Mac and Windows.
Tools Used: Django, React.js, NLP (Rule-based), Git, Notion, Figma
Presentation Link: https://tinyurl.com/lecsum-eosp
GitHub Link: https://github.com/NishantNepal1/LecSum

6. Data Visualization Task:

This was a visualization task given to me by one startup before hiring me as an intern in Winter 2022.

Tools3 Used: D3.js, Colab (for data preprocessing), Flask, Heroku
Link: https://bisonai-task.herokuapp.com/
GitHub Repo: https://github.com/bibekyess/Bisonai-Assignment