Dip Kiran Pradhan Newar

Software Engineer with two years of experience working professionally with Python and web development. Currently working as Graduate Research Assistant at the University of Nebraska Omaha and will graduate in December 2022 with a master of Science in Computer Science. I have skills and experience with Python, Java, Django, Data Science, ML, React, CI/CD pipeline, Docker, and version control systems.

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website: https://dipkiran.github.io/   LeetCode: https://leetcode.com/pradhandip/

Skills
Programming: Python, Java, JavaScript, C++, PHP, Go, MATLAB, Octave
Databases: SQL: Postgres, MySQL, NoSQL: MongoDB
Big Data/ML Tech.: NumPy, Pandas, Regex, POS tagging, SRL, Lemmatization, Stemming, NER
Other Tools: Git, Docker, Redis, REST API, QGIS, ArcGIS, graphql, AWS
Web Frameworks: Django, Flask

Work Experience
Graduate Research Assistant(the University of Nebraska at Omaha)   **Jan 2021-Present**
- Wrote memory-efficient scripts to Automate the Detection and Repair of Cryptographic Misuse.
- Suggested the developer's Systematic Way of coding from GitHub open-source projects using the NiCad clone detector for given code fragments.
- Highlighted the code differences of the Version Control System using ChangeDistiller and diff2html.
- Visualized the data flow inside the java file in tree format by integrating Eclipse Zest.

Software Engineer (Nepware Pvt. Ltd.)   **Feb 2019- Dec 2020**
- Designed and developed the database and backend using Python Django for BIPAD (create alert of any natural and non-natural hazard) and deployed them on AWS using Docker with CI/CD pipeline.
- Researched and developed a secure attendance system software utilizing in-house networking devices by tracking the time employees are connected to wifi using Raspberry Pi as a server.
- Built a well-documented web application to track COVID-19 patients by tracing the trail of places traveled by infected individuals using data from the Nepal Government.
- Designed and implemented an algorithm that pre-processed the disaster-related data from the CDRMP branch of UNDP Nepal by using Pandas and NumPy, and visualized them with Seaborn to generate pdf using xhtml2pdf in Python Django.
- Wrote scripts to develop a portal that analyzed the Excel data collected using the KoBo framework.

Internship (Paaila Technology)   **Jan 2018- Feb 2018**
- Built custom web crawlers using Selenium to scrape data from multiple Nepali online news portals.
- Preprocessed Nepali text to extract verbs, prepositions, nouns, and others using Sklearn and Pandas.

Projects:

1. **Automated Program Repair for API Misuse Vulnerabilities**
   - Designed an application in Eclipse Plugin to detect and repair Cryptographic Misuse in Java Files automatically.
   - Summarize and visualize the root cause and display the indicator position for the misuse.
   - Suggest developers in similar systematic ways using the projects from GitHub.
   Link: https://digitalcommons.unomaha.edu/csworkshop/2022/schedule/11/

2. **Building Information Platform Against Disaster**
   - Well-documented script to manage and organize the database in a centralized platform importing it from different platforms.
   - Generate alerts and warnings for disasters after analyzing the data.
   - Used CI/CD pipeline in GitLab to test and deploy the site.
   - Managed APIs to connect the database to the website.

   Link: https://bipadportal.gov.np/

3. **Neat +**
   - Used online portals instead of using Excel to collect data.
   - Imported excel data from KoBo framework data to the database.
   - Visualized and analyzed the human factors.

   Link: https://neatplus.org/

4. **Data-Driven Disaster Report**
   - Developed a system to summarize the incidents in Nepal with different filters with a pdf report generated using Python.
   - Used the Data from Desiventar (Excel format) and DRR Portal(http://drrportal.gov.np/).
   - Analyzed data using Pandas and Numpy, and charts were developed using Seaborn.

   Link: https://nepware.com/work/data-driven-disaster-report

5. **Gender-Based Violence Website**
   - Designed and Implemented to develop a website with smart search compatibility using React and CSS.

   Link: https://gbvaor.net/

6. **Casualty Information Extraction and Analysis from News**
   - Built custom web crawlers to scrape accident-related data from news portals.
   - Used tokenization, POS tagging, regex, SRL, NER, and lemmatization using a lemmatizer from the Spacy library for data preprocessing.
   - Built a data pipeline (ETL) to process textual data in a structured format and store it in the database.
   - Performed visual data analysis using D3.js to create dynamic maps and charts.

   Link https://github.com/Dipkiran/Major-Project

Education
University of Nebraska at Omaha, Omaha, NE   Jan 2021-Dec 2022
Masters of Science in Computer Science   GPA: 3.79
Tribhuvan University, Kathmandu, Nepal   Nov 2014- Oct 2018
Bachelor of Engineering, Computer Engineering   GPA: 3.70

Publications
- "Casualty Information Extraction and Analysis from News", In 16th International Conference on Information Systems for Crisis Response and Management (Link)

Certification and Training
- Crash course on Python by Google, Coursera (Link)
- Applied Text Mining in Python, University of Michigan, Coursera (Link)
- Machine Learning, Stanford University, Coursera (Link)
- AWS Cloud Technical Essentials, Coursera(Link)