Deepam Dibyajyot

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Technical Skills

Languages: Python, SQL, C/C++, Racket, Bash, JavaScript/TypeScript
Frameworks/Libraries: Pandas, NumPy, Scikit-Learn, Pytorch, OpenCV, D3.js, React.js, Node.js, Next.js
Developer Tools: MySQL, PostgreSQL, SQLAlchemy, MongoDB, Git Bash, GitLab, Jira, Asana, Figma

Experience

Full Stack Developer   Jan 2023 – Apr 2023
XE.com   *Newmarket, ON*
- Migrated Public Transfer PHP pages to Next.js, improving responsiveness, scalability, & efficiency by **37%**, effectively handling over **1.6+ billion** annual visits.
- Implemented a real-time currency chart using **D3.js**, enhancing visualization & boosting engagement by **35%**.
- Revamped the sitemap architecture, employed XML separation yielding **15%** increase in SEO optimizations.
- Created destination pages using Contentful CMS, GraphQL, and AWS to streamline content delivery & enhance user experience, driving a **45%** increase in money transfers in key corridors.

Computer Vision Developer   July 2022 – Present
Waterloo Aerial Robotics Group   *Waterloo, ON*
- Engineering an autonomous UAV to compete in various international UAS student competitions
- Implemented a **CIFAR-10** classifier using a **PyTorch** convolutional neural network (**84%** accuracy)

Software Developer   May 2022 – Aug 2022
CAA Club Group   *Thornhill, ON*
- Implemented the employee portal on **Next.js** and **MaterialUI**, supporting an userbase of 4500+ employees.
- Automated vehicular deployment portal, resulting in **225%** faster response time to road-side emergencies.
- Created REST APIs in **MuleSoft/SoapUI** and **Axios** for security audits and live user data synchronization with the database.

Projects

MedScape ⊙ | *Python, PyTorch, Flask, Streamlit*

- Developed image registration tool to align & consolidate multiple eye images, yielding unified image of retina.
- Engineered CNN model using **SuperRetina** & **Torchvision**, trained on FIRE database having 134 image pairs.
- Implemented keypoint detection algorithm, optimizing **accuracy to 99.25%** via spatial transformations.
- Employed **Streamlit** for dynamic dashboards, enabling user input of images and giving insights into image registration accuracy, alignment metrics, and transformation parameters.

MovieMatch ⊙ | *Python, PyTorch*

- Developed an **NLP based** recommendation system giving top movie suggestions based on user query.
- Leveraged **BERT transformer** architecture for contextual encoding in feature extraction for movie suggestion.
- Processed **40,000** movie summaries, applying lemmatization & tokenization techniques for standardized textual analysis.

PriceMatch ⊙ | *React, Flask, Firebase, Python, Google CloudVision, PostgreSQL, TensorFlow*

- Developed a web-app which compares grocery prices across stores using **Firebase** and **ReactJS**.
- Leveraged **Google CloudVision**, **Scikit-Image** and **TensorFlow** to recognize products at a **92% accuracy**.
- Processed user and image data using **PostgreSQL** and set up user authentication using Google OAuth.
- Programmed **Flask REST API** handling transactions between Firebase, Google Cloud and React.

Education

University of Waterloo   Waterloo, ON
Candidate for BCS in Computer Science   *Sept. 2021 – May. 2026*