Rajan Ghimire

📞 4374383992   ✉ rjnghimire@outlook.com   📍 Brampton, Ontario   in LinkedIn   ○ Github   🔗 Blogs

Publications

Ghimire R, Basnet R, Shahi R, Joshi S., Leveraging Transliteration, Spelling Detection and Correction, Parts of Speech Tagging and Next Word Prediction for Effective Nepali Typing,
KEC Conference Proceedings, 2022, Vol. 4, pp 55-62 , ISSN 2961 - 1695(Print), ISSN 2961 - 1997(Online) ⧉

It introduces a unique application focused on improving typing efficiency in the Nepali language. Recognized the significant digital transformation in various sectors emphasizing the need for a hassle-free typing tool in native languages. Next Word Prediction and Parts of Speech Tagging functions were done using a BERT model trained on a Nepali dataset.

Ghimire R, Basnet R, Maharjan R., Eye Controlled Virtual Keyboard Using Convolutional Neural Networks,
KEC Conference Proceedings, 2021, Vol. 3, pp 237-242, ISBN 978-9937-0-9019-3 ⧉

It presents a critical advancement in digital communication, tailored explicitly for differently-abled individuals. Libraries like Dlib and openCV were used followed by Convolutional Neural Networks to monitor and interpret eye movements and blinks to select keys on the keyboard effectively. Facilitates differently-abled individuals with a highly efficient, inclusive communication tool.

Education

Artificial Intelligence & Machine Learning, *Lambton College*   01/2024 – present | 265 Yorkland Blvd, Toronto

Bachelors in computer engineering, *Kantipur Engineering College* ⧉   2017 – 2022 | Lalitpur, Nepal
Percentage: 70.51%
Relevant Courses: Algorithms and Data Structures, Artificial Intelligence, Object Oriented Programming, Data Mining, Theory of Computation, Operating System, Database Management System.

Professional Experience

City of Brampton, *STEM instructor*   04/2024 – present | Brampton, Canada
Delivered engaging instruction in Computer Programming with Python (Levels 1 & 2) and Engineering and Coding with VEX IQ Robotics (Level 1), littleBits, micro:bit to students aged 10-14.

Trifecta Digi Media, *Digital Sales and Data Analyst*   03/2023 – 11/2023 | Washington(Remote), US
- Conducted data analysis, churn rate, and market basket analysis of a supermarket with 100+ branches.
- Boosted alcohol sales of the supermarket by 8.81% through data analysis of purchasing patterns and strategic promotion development over six months.

E.K. Solutions Pvt. Ltd.

Machine Learning Engineer | Lalitpur, Nepal   04/2022 – 11/2023 | Lalitpur, Nepal
- Built a multilingual resume parser and semantic job matcher using LLaMA2, achieving a P@10 of 0.95 and P@20 of 0.92 for keyword extraction, and a MAP of 0.85 for job description matching.
- Applied quantization techniques to a semantic segmentation model, reducing size by 70% and increasing speed by 32% with only 2% accuracy loss.
- Built an invoice parser by fine-tuning Donut and table transformers on 30+ samples, recognizing table/cell structures, and extracting key-value pairs with 95% precision and 92% cell coverage, at 1.5 seconds per invoice.
- Developed an orientation-free YOLOv5 object detection model for creatinine and DiAcSpm in medical kits, achieving theta loss of 0.12556 and mAP of 0.13963; Manually collected data (3000+ images) with data augmentation.

- Developed an SQL database agent to convert human queries to SQL and generate tabular responses/Plotly visualizations; finetuned CodeLlama with LoRA on NSText2SQL + custom datasets, implemented table selection LLM using the same base CodeLlama + LoRA, database connector, prompt formatter, and text-to-SQL-to-viz pipeline.

Natural Language Processing Trainee   12/2021 – 04/2022 | Lalitpur, Nepal
- Conducted in-depth research and practical implementation of NLP tools and techniques, including NLTK, Spacy and Word embeddings while mastering NumPy operations and applications.
- Implemented and trained various machine learning and deep learning models, such as PCA, K-Means, Logistic Regression, and Transformers (BERT, XLNET, GPT), using PyTorch and the Hugging Face library for sentiment classification and news classification.

Skills

Programming Languages:
Python (Expert), C++(Experienced),Java(Experienced), C(Experienced)

API Frameworks
Flask, FastAPI, Spring

Databases
MySQL, PostgreSQL, MongoDB, Redis

ML Models
LLMs : (LLaMa2, LLaMA, StarCoder, GPT-2, BERT)
Generative Models : (CLIP, VQ-GAN, WGAN, SRGAN, VQ-VAE)
Object Detection : (YOLO, DETR, yolov5_obb)
Segmentation: (SAM, U-Net, Depplabv3+)

Machine Learning Tools
Pytorch, PyTorch Lightning, Tensorflow, Keras, Scikit-learn, Pandas,

Computer Vision Tools
OpenCV, Pillow, Numpy, Open3D, PCL

NLP Tools
spaCy, fastText, NLTK, Gensim

Backend Frameworks
Spring, Django, NextJs

Achievements

Scholarship

- merit-based scholarship from Tribhuvan University in the 5th and 6th semesters of Bachelor in Engineering.

Awards
- Selected among the top 3 projects in QuantumHack (Project: Neural Pass password manager)
- Winner of LITEHACK 2020 for Hands-free operation of the computer
- Secured first position in LITE IDEATHON 2020 for Eye Problem Detector
- Secured first position in LITE Technical Exhibition 2019 for 3D Battle tank game on Unreal engine

Extra-Curricular Activities

- Involved as a mentor in a 3-day Natural Language Processing workshop ⧉ at IIMS College with all-year MCS students.
- Involved as a mentor in career counseling on the pursuit of a Bachelor's degree in AI and Data Science for undergrads at IIMS College.

Rajan Ghimire

Toronto, ON
+1 (437) 438 3992
rjnghimire@outlook.com
GitHub | LinkedIn

June 28, 2024

Christina Cain
Google
1600 Amphitheatre Parkway
Mountain View, CA 94043

Dear Christina Cain ,

I am writing to express my enthusiasm for the Machine Learning Engineer position at Google, as advertised on your careers page. With a robust background in artificial intelligence, machine learning, and software development, I am confident in my ability to contribute effectively to your team.

My educational journey at Lambton College, where I am pursuing a Graduate Certificate in Artificial Intelligence & Machine Learning, has equipped me with cutting-edge knowledge and practical skills. During my time at Kantipur Engineering College, I not only excelled academically, securing a merit-based scholarship for four semesters but also honed my technical skills through hands-on projects and competitions, such as winning the LITEHACK 2020 and the LITE IDEATHON 2020.

In my professional experience as a Machine Learning Engineer at E.K. Solutions Pvt. Ltd., I have led several innovative projects that demonstrate my ability to tackle complex problems and deliver high-quality solutions. For instance, I developed a multilingual resume parser and semantic job matcher using LLaMA2, achieving impressive precision and recall metrics. I also optimized a semantic segmentation model, reducing its size by 70% and increasing its speed by 32% with minimal accuracy loss. These projects reflect my proficiency in machine learning, natural language processing, and optimization techniques.

Moreover, my role as a STEM instructor for the City of Brampton allowed me to translate complex technical concepts into engaging lessons for young students. This experience underscores my strong communication skills and my ability to inspire and mentor others.

I am particularly drawn to Google because of your commitment to innovation and excellence in technology. The opportunity to work on groundbreaking projects that have a global impact aligns perfectly with my career aspirations. I am excited about the prospect of bringing my technical expertise, problem-solving skills, and passion for innovation to Google's team.

Thank you for considering my application. I look forward to the possibility of discussing how I can contribute to the success of Google.

Sincerely,
Rajan Ghimire

How ChatGPT helped me?

ChatGPT was an incredibly helpful tool as I was crafting my resume and cover letter. With its user-friendly interface, I was able to input information about my skills, experiences, and education with ease. The AI model then provided me with tailored suggestions for both documents, ensuring they were polished and professional. It even offered specific examples of action verbs and phrases that could be used to highlight my strengths and accomplishments. Additionally, ChatGPT proofread my work for any grammar or spelling errors, which saved me time and effort in the revision process.