AAYUSH ACHARYA

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EDUCATION

Bachelor's in Computer Engineering November 2017 – April 2022
Tribhuvan University
Institute of Engineering, Pulchowk Campus

National Examinations Board July 2015 – April 2017
United Academy Higher Secondary School, Kumaripati

School Leaving Certificate March 2015
GEMS School, Dhapakhel

UNDERTAKEN ROLES

Software Developer | Rara Labs
May 2022- Current
• Built ML pipelines for identifying medical harms based on EMR data.
• Carrying out projects in REST and GraphQL API using Go. Designed independent execution threads, worked with asynchronous messaging using RabbitMQ, constructed ISO20022 financial standard digitally signed messages and devised CI/CD pipelines.

Research Intern | Nepal Applied Mathematics and Informatics Institute for Research (NAAMII)
Aug 2021- April 2022
Worked on Nepali automatic speech recognition using Wav2Vec 2.0 and classification using MURIL, a BERT model pretrained on indic languages, as final year project thesis supervised by Bishesh Khanal, Ph.D. as a research intern at NAAMII.

Intern | Support and Solutions Department | LogPoint
Jan 2022- May 2022
Acquired knowledge about the fundamentals of Linux, debugging Python and Java services, shell scripting, monitoring and performance tuning, CIFS, ZFS, LVM and SIEM softwares in general.

PROJECTS

R2PX | Industry

- Leveraged asynchronous messaging with RabbitMQ to ensure efficient and reliable communication between system components.
- Constructed secure and digitally signed messages using the ISO20022 financial standard, safeguarding the integrity of financial transactions within the R2PX service.
- Established robust CI/CD pipelines, enabling automated integration and deployment for accelerated time-to-market and enhanced development efficiency.
- Spearheaded the design and implementation of independent execution threads, optimizing performance and scalability in Go for the R2PX project.

Intellix | Industry

- Developed and engineered Intellix, a cutting-edge healthcare management product that transforms patient allocation to hospitals, wards, and beds.
- Utilized comprehensive patient data, including demographics and EMR records, to build predictive models for early sepsis detection.
- By integrating sepsis prediction algorithms, Intellix significantly enhances patient safety and improves healthcare outcomes by enabling timely intervention and treatment for sepsis cases.
- Spearheaded the creation of robust task assignment functionalities, including checklists, vital measurements.

SSG | Industry

- Engineered a serverless static site generator (SSG) in GCP, leveraging its robust infrastructure and services.
- Implemented in-house templates and utilized Go's templating syntax for efficient creation and injection of dynamic content into static sites.
- Enabled seamless publishing of static sites with a serverless architecture, utilizing App Engine for backend hosting and Pub/Sub with Cloud Functions for automated deployment.

Automatic Nepali Speech Recognition and Classification | Research Internship

- Developed an integrated ASR (Automatic Speech Recognition) and NLP (Natural Language Processing) system that generates accurate transcripts and assigns relevant categories to Nepali audio inputs.
- Leveraged a combination of self-supervised wav2vec2 model and CTC (Connectionist Temporal Classification) to perform efficient speech-to-text conversion, ensuring high transcription accuracy.
- Integrated a BERT-based MuRIL (Multilingual Representations for Indian Languages) model specifically designed for Indic languages to categorize the generated transcripts into relevant categories such as Sports, Politics, and more.