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Anmol Guragain

Portfolio: Anmol's Portfolio
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EDUCATION

B.Tech in Computer Science and Engineering (CSE)

Dec 2020 - Aug 2024

Vellore Institute of Technology - Tamilnadu, India

- Specialization in Information Security | **Department Rank 6 holder**
- CGPA: 9.38/10

TECHNICAL EXPERIENCE

Research Assistant

August 2024 - Present

Nepal Applied Mathematics and Informatics Institute (NAAMII)

- Working under the supervision of Dr. [Bishesh Khanal](#), focusing on the development of parallel corporas for the Nepali language, using IndicTrans2 inference model.
- Contributing to speech and audio processing research for Nepali, a low-resource language, to enhance linguistic resources and tools.

Part-Time Research Student - Remote

July 2024- Present

AISG Speech Lab, Nanyang Technological University

- Collaborated with Dr. [Chng and his team](#) as a remote research student, developing models for the [ASV Challenge 2025](#).
- Innovated deepfake detection techniques using Progressive Enhancement learning on CQT and LFCC features. [Code](#).

Research Intern - SIPGA awardee

Jan 2024- July 2024

Aural and Language Intelligence, A*Star

Singapore

- Synthesized a diverse audio dataset using various voice clone models like TTS and pre-processed for training and evaluation.
- Fine Tuned WavLM model with LoRA for Speech Emotion Recognition, studied and implemented speech SSL models like wavlm, wav2vec2, rawboost methods for augmentation for Spoof Audio Detection.
- Developed an ensemble system using speech foundation models and a novel Squeeze-and-Excitation Aggregation (SEA) method for robust deepfake detection in singing voices, achieving a leading 1.93% equal error rate in the SVDD 2024 challenge and achieved Rank 4th. [Code](#)

Software Engineering Intern

May 2023- June 2023

Thakral One

Kathmandu

- Leveraged Python's Django, PostgreSQL, APIs, Redis, and Docker to streamline network device monitoring.
- Used DevOps tools like Zabbix and Nornir to monitor Network Devices, fetched the result via api and created a UI in Django to restructure problem ticket flow among internal departments and cut down manual email based work by one-third .

Student Researcher

April 2021- June 2021

Digital Gurkha

Kathmandu

- Conducted research in Mathematics and Cryptography, leading to the creation of the 'Cryptography for Everyone' course with 70+ student enrollments.
- Topics Included : Asymmetric, Symmetric Key Cryptography, Hashing , Key Exchange , Network Vulnerabilities.

NOTABLE PAPER SUBMISSIONS AS FIRST AUTHOR

1. **Speech Foundation Model Ensembles for the Controlled Singing Voice Deepfake Detection (CtrSVDD) Challenge 2024**
[under review][SLT 2024]
2. **Benchmarking Language Models for Offensive Sentences Classification in Offensive Nepali Roman Multi-Label Dataset**
[under review][EMNLP 2024]

SKILLS

Tools and Languages

Java, C, Python (pytorch, flask, django), PHP, React, SQL, Github, Nornir, Grafana , Docker

Soft Skills

Public Speaking, Team-Project Management(Slack,Jira),Spanish Language

Online Certifications

Cryptography by *Stanford University* , Security in Google Cloud Specialization by *Coursera* , SC 900 Certification *Microsoft*, Machine Learning by Andrew Ng

RESEARCH PROJECTS

Parameter Efficient Fine Tuning for Speech Emotion Recognition

Conducted research in speech emotion recognition, fine tuned the HuBERT model that achieved 86% accuracy on evaluation with diverse datasets for 8 emotions. Open sourced training scripts and Deployed the model into website named 'emocare':[Python, ReactJS]

Image Encryption Using Hybrid Cryptographic Technique

Implemented enhanced Image Encryption method using RSA and BPCS algorithm which increased overall Algorithm Complexity and decreased decryption time also while still enhancing privacy and confidentiality. [Python, C#]

ACTIVITIES AND HONOURS

Optimization of Waste Collection Vehicles using Genetic Algorithms Proposal Submission, Mayor, Bhadrapur Municipality	2024
Campus Director , Hult Prize Foundations, United Nations Program	2022-23
Merit Scholarship for 1st and 2nd Year, VIT, University ,	2021-22
COMPEX Scholarship (Full ride Scholarship for Undergraduate Studies), Embassy of India	2020
Lead a team as Chief Editor on Publishing College's Annual Magazine.	2018-19
Certified Program Co-ordinator Eurasia Reiyukai.	2013