# Sulav Timilsina

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## EDUCATION

Bachelor's Degree in Computer Engineering November 2017 - April 2022
Pashchimanchal Campus, Institute of Engineering,
Tribhuwan University, Nepal

(10+2) in Science June 2015 - June 2017
SOS Hermann Gmeiner School Bharatpur, Bharatpur, Chitwan, Nepal
Graduated with an average score of 80.90%

## WORK EXPERIENCE

**Palua.AI** June 2022 - Present
Artificial Intelligence Engineer

- Trained a BERT(110 M Parameters) based Language Model in Nepali, with data scraped from Nepali News Sites.
- Developed the first-ever benchmark for Nepali NLP tasks inspired by GLUE Benchmark.
- Working on Active Learning for NLP to reduce the training data drastically.

## PUBLICATIONS

1. Timilsina, S., Gautam, M., & Bhattarai, B. (2022). *NepBERTa: Nepali Language Model Trained in a Large Corpus (Accepted at AACL-IJCNLP 2022)*. Tribhuvan University, Tribhuvan University, Imperial College London.

## PROJECTS

**Transformer-based Model for Nepali Language Understanding**

- With about 14.5 GB of text data (0.8 Billion words) by scrapping the top 35 Nepali News Sites, a BERT base model (110 M parameters) was pre-trained from scratch on TPU v3-128.
- Finetuned on 5 different downstream tasks (NER, Sentiment Classification, Sentence Pair Similarity, Content Classification, POS Tagging).

**Single Image Super-Resolution**

- Implemented SR-GAN from scratch on Tensorflow.
- Used Wasserstein Distance with Gradient Penalty to enforce smooth training of the generator-discriminator network.

### Mero Health

- Built an Android app for Hospital/Doctors Appointment
- Used Flutter in frontend and Node JS in the backend with Mongo DB
- Implemented Naive Bayes Algorithm for the recommendation of doctors as per the symptoms.

### Nepali Sign Language Detection

- Generated NSL dataset.
- Trained a CNN model for the classification of gestures of different alphabets in the Nepali Language.

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## TECHNICAL SKILLS

- Python with libraries used for machine learning and deep learning like *Pandas, Numpy, Scikit-Learn, Open-CV, Tensorflow, Huggingface, etc*
- Cloud Computing with *Google Cloud Platform*
- Deployment platforms like *Streamlit and Kubernetes*
- Distributed training using *GPU and TPU*
- Front-end programming using *HTML/CSS*
- Back-end programming using python frameworks like *Django and Flask*
- Android Development using *Flutter*
- Version Controlling with *Git*
- Linux skills like shell scripting and familiarity with different Linux distributions

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## CERTIFICATES

- **Deep Learning Specialization** from deeplearning.ai on Coursera
- **AI for Medicine Specialization** from deeplearning.ai on Coursera (On-Going)
- **Winter School in AI** (11-Day Event) organized by NAAMII, a non-profit research organization in Nepal

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## HONORS AND AWARDS

- Winner of **LeapFrog Code Camp 2019,** a three-day event where my team presented a cheap EKG machine capable of detecting early signs of cardiac arrhythmia leveraging the power of Deep Learning
- **Mahatma Gandhi Scholarship 2015,** provided by Indian Embassy in Nepal

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## LANGUAGES

- Nepali: Native/ Bilingual Proficiency
- English: Fluent/ Full Working Proficiency