Bishram Acharya

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Education

•Pulchowk Campus, IOE, Lalitpur *2025 March*

Bachelor's in Computer Engineering. **Score: 80%**

∗ Relevant Courses: Artificial Intelligence, Probability and Statistics, Data Structures and Algorithms, DevOps Fundamentals, Software Engineering, Theory of Computation, Discrete Structures, Microprocessor, C and C++ Programming, Computer Organization and Architecture, Mathematics

Experiences

•Research Intern at NAAMII *September 2024-present*

Transforming Global Health with AI (TOGAI) Lab

– Built pipeline for ISIC skin lesion classification challenge
– Currently engaging with papers in the intersection of Vision Language Models and Active Learning

•Freelancer *Nov 2023-present*

Upwork

– Built a Python Application for automatic news extraction and display from skynews.au. Used **Python, Html, CSS**
– Built a data scraper for a real estate website. Used **Python, Selenium**
– Upwork Profile

Projects

•AI Generated Image Detection

Final Year Major Project

– Implemented a frequency-aware deepfake detection model, FreqNet, which uses convolutional layers within the frequency space and incorporates High-Frequency Representation of Image (HFRI), High-Frequency Representation of Features (HFRF), and Frequency Convolutional Layers (FCL) to enhance detection accuracy and generalize across various deepfake methods by capturing subtle, high-frequency details.
– Tools Technologies Used: Python, PyTorch, Numpy, OpenCV

•Cross Platform Fingerprint Matching Using CNN

Third Year Minor Project

– Trained a siamese network made of a couple of VGG-16s and DenseNet to determine whether the two given fingerprints are match or no match. This project aimed to observe the usefullness of VGG16 and DenseNet as a Siamese network for effective matching of contactless and contact-based fingerprints.
– Tools & technologies used: Python, TensorFlow, Numpy, Pillow

•Bitcoin Portfolio Analysis: Risk, Returns & Optimization

Analysis of 8-year performance of Bitcoin vs. S&P 500 and gold

– Analyzed Bitcoin's risk and return profile in comparison to traditional assets like the SP 500 and Gold.
– Evaluated the impact of adding Bitcoin to a traditional portfolio on overall performance and risk-adjusted returns.
– Tools & technologies used: Pandas, NumPy, Seaborn, Matplotlib, Sklearn

•Skin Cancer Disease Classification

ISIC 2019 Challenge

– Developed a deep learning model using ResNet-18 for the classification of skin lesions in dermoscopic images as part of the ISIC 2019 Challenge.
– Tools Technologies Used: Python, PyTorch, Tqdm, Pillow, Scikit-learn

•Logistic Regression from Scratch

Supervised Learning Project

– Implemented Logistic Regression from scratch and solve a binary classification problem on heart disease dataset.
– Tools & technologies used: Python, Pandas, NumPy, Seaborn,Sklearn, Sklearn metrics

•Energy Demand Prediction

Time Series Project

– Predict the future energy demand given the weather conditions as input.
– Tools & technologies used: Pandas, NumPy, Seaborn,Sklearn,RandomForestRegressor, Sklearn metrics

Certifications and Courses

- **Complete Data Science & Machine Learning Bootcamp (Certificate)**

Udemy

44 Hours

– Data Exploration and Visualizations, Neural Networks and Deep Learning, Model Evaluation and Analysis, Python, Tensorflow 2.0, Numpy, Pandas, Scikit-Learn, Data Science and Machine Learning Projects and Workflows, Data Visualization in Python with MatPlotLib and Seaborn, Transfer Learning

- **Deep Learning Specialization (Certificate)**

Coursera-Andrew Ng

115 Hours

– Neural Networks and Deep Learning: Vectorization, backpropagation, deep neural networks, Computer Vision; Hyperparameter Tuning, Regularization and Optimization, L2 Regularization, Dropout; CNN layers, transfer learning, multi-class classification, object detection, Sequence Models: RNNs, LSTMs, GRUs for NLP tasks; attention mechanism for speech recognition, optimizing ML workflows, Structuring ML Projects, end-to-end deep learning.

- **Complete Python Developer Course (Certificate)**

Udemy

31 Hours

– Data Structures, Object-Oriented Programming with Python, Functional Programming with Python, Lambdas, Decorators, Generators, Testing in Python, Debugging, Error Handling, Regular Expressions, Comprehensions, Modules, Virtual Environments, Developer Environments

- **Artificial Intelligence Course - Samsung Innovation Campus (Certificate)**

Samsung

6 months

– Math and statistics, data preprocessing, visualization, machine learning (classification, clustering, anomaly detection), NLP, deep learning (CNN, RNN, GANs), dimensionality reduction, neural networks, and language models.

- **Generative AI with Large Language Models (Certificate)**

AWS/DeepLearning.AI

16 Hours

– LLM architecture and design,transformer models and attention mechanisms,domain-specific adaptation of models, efficient multi-GPU compute strategies,parameter-efficient fine-tuning (PEFT), LoRA and soft prompt techniques, reinforcement learning from human feedback (RLHF), model evaluation metrics and benchmarks,LLM applications.

- **Custom Models, Layers, and Loss Functions with TensorFlow(Certificate)**

Coursera-Deeplearning.AI

31 Hours

– Functional API and Sequential API, Flexibility of Functional API, Building a Siamese Network, Custom Loss Functions, Building Custom Loss Functions, Contrastive Loss Function, Custom Layers, Building Custom Layers, Extending TensorFlow Model Class, Building a ResNet Model, Custom Callbacks, Implementing Custom Callbacks to Detect Overfitting