

SANJAY KHANAL

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Technical Skills

Programming: Python, JavaScript, SQL, Shell, Bash

Database: Postgresql, MySql, SQLite, DynamoDB

Frameworks: Tornado, Flask, FastAPI, Streamlit, NLTK, OpenCV, TensorFlow, PyTorch, Scikit-Learn, Express.js, Node.js, React.js, Darknet, Onnxruntime

Version Control: Git

Embedded Systems: Arduino, Raspberry Pi, Nvidia Jetson Nano, TX2

Other: Jenkins, AWS EC2, S3, DynamoDB, Nginx, Sequelize, Websockets, Linux, Azure, mender for OTA updates

Experience

Inspiring Lab/ Senior Software Developer

December 2016 - PRESENT, Kathmandu

- Led and directed multiple teams and projects
- System architecture design for various projects
- Hired, trained and mentored junior members to maximize effectiveness

Major Projects

- ***Bigwhale Data Analytics System***

ETL, data analysis and visualization platform primarily used in Healthcare Data Analysis domain.

Responsibilities: Web APIs and SQL queries Development. Hands-on development experience using Python, FastAPI, PostgreSQL, and Bash

- ***Video Analytics System***

System that integrates varieties of video processing and analytics features such as vehicle detection, LPR, vehicle color detection, face detection/recognition/ profiling, motion detection and motion heatmap generation, anomalous activity detection, etc.

Responsibilities: Architecture and basic framework design using concepts such as sockets, Queues, Pipelines, Parallel Processing, GPU computation, Web APIs, asynchronous messaging, etc.

- **RTVTR (Real Time Vehicle Tracking and Recognition) System**

A Scalable system that recognizes vehicles, their type, and their license plate written in handwritten Nepali fonts from multiple cameras connected to it.

Responsibilities: Core backend and API development in Python.

- **Pollen Hunter**

End-to-end software platform for data collection, dataset preparation, labeling, training, evaluation and deployment for a company called **PollenSense**. With the help of this software, even non-technical people can go through the process of complete ML development cycles.

The system included development cycles of Computer Vision and Time series Forecasting models.

Responsibilities: Design and develop the backend in Python.

- **Logistics Management System**

End-to-end system to manage and operate 3rd party logistics company developed using React.js, Node.js, Express.js, Sequelize, and PostgreSQL.

Responsibilities: Design and develop data models and Web APIs.

Huawei Technologies / Drive Test and RF Optimization Engineer

December 2015 - November 2016, Kathmandu

- RF (Radio Frequency) field optimization for Nepal Telecom's GSM and WCDMA projects in various regions of Nepal.
- Performing Single Site Verification and Cluster Optimization
- Performing field quality and performance evaluation and comparison during inter-vendor (Huawei vs ZTE) sites swap
- Inter-Operator RF Benchmarking
- RF related customer complaints troubleshooting
- Performing Site survey and new site recommendation

Tangent Consultant Group / RF Drive Test Engineer

January 2015 - December 2015, Kathmandu

- Performing Drive Test and Optimization of Nepal Telecom's sites under the supervision of Huawei Technologies
- Single site verification and Cluster optimization
- Customer complaints troubleshooting

Renewable Energy Test Station / Trainee

July 2014 - August 2014, Lalitpur

- Quality Compliance Testing of different Renewable Energy Equipment and devices

Education

Kathmandu University / Bachelor's in Electrical and Electronics Engineering (Major in Communication)

August 2010 - December 2014, Dhulikhel, Kavre, Nepal

Other Experiences

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- Python and AI/ML Instructor in different trainings organized by Inspiring Lab under 'Inspiring Lab Education' program.
 - Trainer in different sessions of 'RF Optimization Training' programme organized by A&A Nepal Pvt. Ltd., 2017