

BISHAL THAPA

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EDUCATION

PhD in Computer Science (May 2023 – Present)

Texas State University - San Marcos, Texas

GPA:4.0

Master of Science in Electrical Engineering (August 2021- August 2023)

Texas State University - San Marcos, Texas

GPA:4.0

SKILLS

Programming languages: Python, C, C++

Technical: Linux, Django, Data Analysis (Pandas, NumPy, Matplotlib), Internet of Things, TCP/IP, Socket, MQTT, LoRaWAN, LTE, Computer Networking, Machine Learning Analytics, Statistics, Blockchain, Wireshark, Nmap, Cisco Packet Tracer, Lightweight Encryption, Web Scraping

Languages: English, Nepali (Native), Hindi

WORK EXPERIENCE

Python Developer Intern (Jan 2019 – Oct 2019)

Niva Business Solutions - Bagbazar, Kathmandu, Nepal

- Assisted in developing web application back-end components with multiple clients.
- Worked to maintain the integration of the back-end components and find errors before production.
- Ensured the Django routines are up to date with the latest specifications.
- Worked actively to integrate the programs as per the specifications.

Electronics and Communication Graduate Researcher and Designer (Nov 2019 – Feb 2020)

Datalytics Private Ltd. - Baneshwor, Kathmandu, Nepal

- Performed the modeling and simulation of the electrical and electronics circuit in Proteus Software.
 - Designed and evaluated the electrical circuit designs and performed the modeling and simulation in MATLAB.
 - Performed data analysis and data visualizations for providing decisions accordingly.
 - Participated in regular group meetings, leading the teamwork, and presenting ideas to the team.
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RESEARCH PROJECTS

Private LTE Configuration

- Configured private LTE on Anterix network and implemented IoT network within University's Star Parks facility.
- Worked on applications running on standard LTE, and NB-IoT technology.

IoT Transport Protocol Analysis

- Compared the efficiency of MQTT with baseline TCP socket for use case in IoT and studied their impacts.

LoRaWAN Technology

- Collaborated with Everynet Company to enable LoRaWAN network setup in San Marcos and tested the network by provisioning LoRaWAN devices on them.

Machine Learning Analysis

- Implemented multiple supervised machine learning models on the solar power dataset from Kaggle to forecast the power output of a solar power plant.

Blockchain in IoT

- Implemented a distributed architecture using Gossip protocol from scratch which was deployed using TCP sockets.
 - Compared the effectiveness of Blockchain in IoT with up-and-coming technology Intelligent Cipher Transfer Object.
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TEACHING EXPERIENCE

Doctoral Instructional Assistant, Texas State University, San Marcos

- Foundations of Computer Science - Lab

Graduate Instructional Assistant, Texas State University, San Marcos

- Numerical and Scientific Data Analysis-Python
 - Senior Design I and II
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TRAINING

- Cisco Certified Network Associate (CCNA) Training
 - Advanced Python and Django Training
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PUBLICATION

“Comparative Performance of TCP and MQTT”, International Conference on Digital Telecommunications (ICDT) 2023