Bijay Bartaula

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Objective

To drive technological progress by addressing complex challenges in human-computer interaction and AI, with an emphasis on creating solutions that improve user experiences. I am committed to examining the ethical dimensions of AI and exploring the transformative potential of space exploration, aiming to foster innovation that benefits society. My mission is to create impactful, human-centered solutions that not only advance technology but also contribute to a more sustainable and equitable future. Through this work, I strive to remain adaptable and multidisciplinary, ensuring continuous growth and meaningful contributions to the world.

Technical Expertise

Programming Languages
Python, JavaScript, Java, C++, Rust

Web Development
React, Node.js, HTML/CSS, TypeScript, Next.js

Databases
MongoDB, PostgreSQL, MySQL, Redis

Blockchain Development
Smart Contracts, DApps, Ethereum, Solidity, Web3

Quantum Computing
Quantum Algorithms, Qiskit

AI & Machine Learning
Reinforcement Learning, Computer Vision, NLP, Neural Networks, Deep Learning

DevOps & Cloud
CI/CD, Docker, Kubernetes, AWS, Google Cloud, Azure

Tools
Git, Docker, VS Code, Jupyter Notebooks, IntelliJ, PyCharm

ML Frameworks
TensorFlow, Keras, PyTorch, Scikit-learn

Innovative Projects

UrjaMind (Project I)

Developed machine learning models to enhance energy distribution in hybrid solar-wind systems, leading to optimized energy usage.

Implemented predictive pattern analysis, reducing energy waste and improving efficiency.

Tech Stack: Python, TensorFlow, Pandas, Scikit-learn

AquaSense (Project II)

Designed an IoT-based network to monitor critical parameters across municipal water systems, ensuring efficient water management.

Incorporated machine learning algorithms for real-time leak detection, improving system reliability.

Tech Stack: Raspberry Pi, MQTT, Python, Time Series Database

Bid4Good (Project III)

Created a platform that connects volunteers with NGOs, empowering individuals to contribute through skill-based bidding.

Developed a dynamic real-time bidding system, enhancing user engagement and streamlining operations.

Tech Stack: Node.js, React, WebSockets, PostgreSQL

Emissio (Project IV)

Built a comprehensive dashboard for visualizing organizational carbon emissions, driving sustainability initiatives.

Integrated IoT sensors for seamless data collection, enabling real-time emission tracking.

Tech Stack: React, D3.js, Node.js, MongoDB

NestMitra (Project V)

Developed a mobile application helping families access affordable housing options, integrated with government programs.

Simplified the process of finding suitable housing through personalized recommendations and financial aid resources.

Tech Stack: React Native, Firebase, Node.js

VirtuRehab (Project VI)

Created a virtual reality-based rehabilitation system designed to support patients through therapeutic exercises.

Achieved a high level of patient satisfaction through immersive, interactive therapy sessions.

Tech Stack: Unity, C#, VR Hardware Integration

MedPulse (Project VII)

Developed an AI-powered platform for continuous health monitoring, providing insights into key health metrics.

Enabled early detection of anomalies with a high level of accuracy, supporting proactive healthcare management.

Tech Stack: Python, TensorFlow, Flask, IoT Sensors

HireIQ (Project VIII)

Designed an AI-driven system that matches candidates with ideal job opportunities using advanced natural language processing.

Streamlined recruitment by automating resume screening and job description analysis, enhancing job placement accuracy.

Tech Stack: Python, React, Node.js, Elasticsearch

Education

B.E. in Computer Engineering   2022 - 2026
NCIT, Balkumari, Nepal
+2 SLC in Computer Science   2020 - 2022
NIST College, Banepa, Nepal
Academic Foundation   Somewhere - Mar 2020
SJSS, Bhakundebesi, Nepal

This CV is a draft in progress.