

Er. Santosh Pandey

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EDUCATION

- **IOE, Thapathali Campus** Thapathali, Kathmandu
Bachelor in Computer Engineering ; Percentage: 74.58 *Sept. 2019 – Jul. 2024*

PROFESSIONAL SUMMARY

- Python Developer with over 2 years of experience building scalable backend solutions and microservices using Django, Flask, and FastAPI
- Adept at Agile workflows, CI/CD(GitHub Actions, Docker Compose), and cross-functional collaboration
- Strong problem solver with a focus on performance and system design

TECHNICAL SKILLS

- **Languages:** HTML, Python, Javascript, C++, SQL, NoSQL
- **Frameworks:** FastAPI, Flask, Django, Robocorb RPA, Crawl4AI, ReactJS, NextJS
- **Tools:** Git, Docker, Nginx, AWS, Azure, Linux, Firebase, MongoDB, PostgreSQL, Elasticsearch
- **Data Science and ML:** Pandas, Numpy, Scikit-learn, Seaborn, Computer Vision, NLP, RAG, Model Optimization and Hyperparameter Tuning, TensorFlow, PyTorch, Embedded Machine Learning
- **Practices:** Microservices, REST APIs, CI/CD, Agile
- **Coursework:** : Artificial Intelligence, Data Mining, DSA, OOP, DBMS, Probability and Statistics, Numerical Methods, Theory of Computation, Networking

EXPERIENCE

- **Freelancing** Remote
Software Engineer *Dec 2024 - Present*
 - **Raid Sentinel:** Raid Sentinel is the app to track your ARK account for possible raid. The backend is build on **Django Restframework** with **Posgtres** as the database. **Celery** and **celery beat** is used to schedule and run tasks.(System Architecture Design, Development and Deployment)
 - **Bhasasanjal:** Bhasasanjal is a language learning platform built on **FastAPI** and react js with **MongoDB** as the database.(System Architecture Design, Devlopment and Deployment)
 - **Trekpal Nepal:** Trekpal Nepal is the hiking and trekking website for the tourists built on reactjs and **Django** with **MongoDB** as database.(System Architecture Design, Development and Deployment)
- **QuickFox Consulting** Baneshwor, Kathmandu
Software Engineer *Jan 2024 - Dec 2024*
 - **Quick CCA:** Quick CCA is an automation system for automatic cheque processing (using **OCR**) and clearance for banking systems built on **DRF** and **ReactJS**; Currently deployed at Global IME Bank.
 - **RPA (Robotic Process Automation):** Utilized the Robocorp RPA library to design and implement automation solutions, optimizing business processes by automating repetitive tasks and improving operational efficiency.
 - **Signature Verification:** Developed a signature verification system using a Siamese network to accurately distinguish between authentic and forged signatures, enhancing security and fraud detection capabilities.
 - **QuickRef:** Built a chat application using RAG + LLaMA 3, improving information retrieval accuracy and efficiency for bank employees.
- **AutomateBoring** Sarasota, Florida
Software Engineer(Remote) *May 2024 - Aug 2024*
 - **Learning Management System (LMS):** Designed and developed a robust Learning Management System. Implemented secure user authentication, video streaming, quizzes and interactive features to enhance the educational experience.
 - **Data Extraction Automation:** Developed an automated data extraction solution to efficiently retrieve and process data from various sources, including PDFs and websites utilizing Python and RPA tools

PROJECTS

- **Medical Q/A Chatbot (RAG)**
 - Used technologies: Python, Streamlit, OpenAI (GPT), HuggingFace Transformers, **LlamaIndex**, **Pinecone**, and **Jina AI Reranker**.
 - Built a context-aware medical chatbot that retrieves semantically relevant information from ingested PDFs and answers user queries with cited responses using a Retrieval-Augmented Generation (RAG) approach.
 - Implemented PDF chunking with LlamaIndex, domain-specific embeddings using **abhinand/MedEmbed-large-v0.1**, and cloud-based semantic search with Pinecone; reranked results via Jina AI for improved accuracy.
 - Developed an interactive Streamlit frontend with chat history and real-time document preview of referenced sources. [Code](#) [Demo](#)
- **Whatsapp Chatbot**
 - Used technologies are: Python, Django, Openai, **Whatsapp Api** and **Function calling**.
 - Implemented an AI chat agent on the Whatsapp business account capable of answering user queries and capable of performing tasks on request via function calling. [Code](#) [Demo](#)
- **Trek Pal Nepal Website**
 - Developed a trekking platform helping tourists discover 30+ destinations in Nepal, with booking and admin features.
 - Integrated the PACO payment system for easier direct bank Payment for Customers
 - Deployed the website by containerizing the frontend and backend with **Docker** and serving it efficiently through **Nginx**. [Website](#)
- **Smart Dustbin with Garbage Classification Using ESP32Cam**
 - Developed an intelligent dustbin system integrated with **ESP32Cam** for real-time garbage classification and Segregation.
 - Employed **Tiny ML** to optimize and deploy machine learning models on the resource-constrained ESP32Cam.
- **Continual Monument Detection**
 - Applied **knowledge distillation** techniques to transfer knowledge from old model to new model with added class for **Continual Learning**.
 - Implemented a **modified architecture for meta-learning**, integrating **warp layers** into **Faster R-CNN** to enhance model adaptability and performance. [Code](#) [Demo](#)
- **Monument Lens**
 - Developed **Monument Lens**, a mobile application for monument detection and information retrieval, utilizing the **MobileNetV2 SSD** model to achieve efficient object detection on mobile devices.
 - Implemented features to recognize and detect various monuments, providing users with detailed descriptions and historical context.
 - Demonstrated the application's effectiveness in real-world scenarios, offering users an engaging and informative experience when exploring historical sites. [Code](#) [Demo](#)

TRAINING/CERTIFICATIONS

- **Deep Learning Specialization:** Coursera, 2023 [View Certificate](#)
- **Google IT Automation with Python:** Coursera, 2020 [View Certificate](#)
- **Python for Everybody:** Coursera, 2020 [View Certificate](#)
- **Google IT Support:** Coursera, 2023 [View Certificate](#)
- **Building GenAI Applications with MongoDB:** MongoDB, 2025 [View Badge](#)