

# JHARANA ADHIKARI

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<https://github.com/jharana-adhikari-AI>

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## PROFESSIONAL SUMMARY

Full Stack & AI Engineer with 3+ years of experience in developing scalable web and AI solutions using **Python, React, FastAPI, Django, and PostgreSQL**. Strong background in **AI/ML model integration, API development, and cloud platforms (AWS, Azure)**. Skilled in **data-driven design, software testing, teamwork, and communication**, delivering compliant, high-performance systems that enhance decision-making and automation.

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## SKILLS

**Languages:** Python, JavaScript (JS), TypeScript, Java, C, SQL

**Frameworks:** React, Node.js, FastAPI, Django, Flask, ASP.NET, Spring

**Databases:** PostgreSQL, MySQL, MongoDB

**Cloud & DevOps:** AWS, Azure, Docker, Kubernetes, CI/CD, Microservices

**AI/ML Tools:** TensorFlow, PyTorch, LangChain, spaCy, NLP, Classification, Predictive Modeling

**Frontend:** HTML, CSS, Bootstrap, UX/UI Design

**Soft Skills:** Teamwork, Communication, Continuous Learning, Problem Solving, Collaboration.

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## EXPERIENCE

### Associate Software Developer – Canadian Eco Home Group

Aug 2025 – Present

(<https://www.canadianecohome.ca/>) 81 Zenway Blvd #10, Woodbridge, ON L4H 0S5, Canada

- Engineered an **AI-based automation system** integrating Zoho CRM and AWS that dynamically generates **personalized energy reports** for 500+ clients monthly.
- Automated financial calculations for **electricity savings, IRR, and rebate eligibility**, improving cost estimation accuracy by **43%** and reducing manual work time by **60%**.
- Developed **real-time inspection analytics** using FastAPI and React dashboards to visualize performance, anomalies, and test metrics.
- Linked **Zoho APIs** with PostgreSQL databases for secure, automated decision-making — increasing data synchronization speed by **70%**.
- Applied **AI algorithms and statistical models** to analyze energy usage and compliance, enhancing operational efficiency and client engagement.

### Full Stack Developer – Xdezo Technology

Feb 2022 – Oct 2024

- Designed and deployed **SaaS platforms** using **FastAPI, Django, React, and Node.js**, improving response time by **35%** and uptime to **99.9%**.
- Implemented **testing automation** (Postman, PyTest) and CI/CD pipelines in **Azure DevOps**, streamlining software release cycles by **40%**.
- Built REST APIs and integrated **ML-based analytics dashboards** for early detection of performance anomalies, reducing system failure rates by **25%**.
- Collaborated with QA and DevOps teams for **compliance-based release management** and security audits.

### SEO Analyst – Ombryo Lab

Feb 2021 – Jun 2021

- Applied **data mining and regression analysis** to optimize digital campaigns for 300+ publications.
- Automated SEO performance reports, improving analytical insights and increasing organic web traffic by **28%**.
- Used statistical methods to identify performance anomalies, contributing to improved marketing ROI.

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## EDUCATION

PG Certificate – Artificial Intelligence & Machine Learning | Lambton College, Toronto

Jan 2024 – Aug 2025

BSc – Computer System Engineering | University of Sunderland

Oct 2018 – Nov 2022

Focus: Software Engineering, Algorithms, AI, and Data Analysis

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## PROJECTS

### 1. Insurance Document NLP API

*Personal Project · Python, FastAPI, Big Data, DART, Tesseract OCR, spaCy, NLTK, PostgreSQL · March 2025-July 2025*

- Built a production-ready **NLP microservice** for document text extraction and classification.
- Combined OCR + Deep Learning to process 10,000+ documents with **40% faster inference** and **98% text accuracy**.
- Implemented **secure REST APIs** for compliance-friendly data access.

### 2. Chatbot for Financial Document Analysis (RAG + NLP)

Tools: LangChain, GPT-2, OCR, Pinecone, FastAPI, PyTorch

- Built a Retrieval-Augmented Generation(rag) pipeline to query financial statements
- Used semantic vector search and OCR to convert unstructured PDFs into searchable knowledge bases
- Demonstrated >90% accuracy in answering user financial queries

### 3. Apple Stock Time Series Forecasting (LSTM)

Tools: TensorFlow, Pandas, Matplotlib, NumPy

- Designed LSTM-based time series models achieving <5% Mean Absolute Percentage Error (MAPE) on test data.
- Integrated predictions into an interactive visualization dashboard for investors.

### 4. Kijiji House Listing Clustering

Tools: Spark, K-Means, DBSCAN, Power BI

- Scraped and processed 80,000+ listings using Spark for large-scale clustering
  - Developed unsupervised learning models to categorize listings by price range and region
  - Delivered BI dashboard visualizations to aid real estate investment decisions
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## ACHIEVEMENTS:

- **Runner-Up** – Kaggle Traffic Collision Outcome Prediction
  - Developed ensemble **modelling** techniques to achieve 89% accuracy.
  - Applied advanced **feature engineering**, **missing data imputation**, and **model interpretation (SHAP)** to optimize predictions
- **Top Finalist – STEM Fellowship 2024 Summer | Published Paper (2024 IUBDC):**  
Toronto, Canada | Published July 26, 2024
  - Designed an **NLP-powered mental health chatbot** supporting 1,000+ simulated interactions to address anxiety, depression, and PTSD
  - Applied **sentiment analysis** and **ANN models**, achieving **87%+ classification accuracy** on emotional intent recognition
  - Created AI chatbot supporting mental health, demonstrating innovation in **AI + SaaS fusion**.
  - Selected among **17 national finalists** from 500+ entries; published in STEM Fellowship's mental health AI research series