

Irfana Aslam

Python Developer • AI Engineer • Full Stack Developer

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PROFESSIONAL SUMMARY

Python Developer and AI Engineer with an **MS in Computer Science** (CGPA 3.25/4.0, COMSATS University) and 5+ years of international remote experience. Specialist in AI systems, RAG pipelines, deep learning, and full-stack web applications. **Founder** of two independently built platforms — bitwithbite.com and pulsegivers.org — architected and developed entirely solo. Published researcher in computational biology (*Microorganisms*, IF 4.5). Proven track record delivering client projects via Upwork across AI/ML, data science, and web development.

PROFESSIONAL EXPERIENCE

Founder & Full Stack Developer

BitWithBite.com & PulseGivers.org

2024 – Present

Lahore, Pakistan

- Founded and built **bitwithbite.com** — AI-powered EdTech platform featuring coding challenges, AI mentor, adaptive skill tree, resume analyser, career roadmap, and multi-role admin dashboard
- Founded and developed **pulsegivers.org** — community and social-impact platform with user management, content delivery, and admin operations, built entirely solo
- Architected the complete stack: frontend UI, PHP REST APIs, MySQL, JWT multi-role authentication (superadmin / admin / editor), and RAG-based AI integrations
- Sole developer responsible for architecture, backend, frontend, DevOps, hosting, SEO, and ongoing features
- Technologies: Python, PHP, JavaScript, MySQL, HTML/CSS, AI APIs, cPanel*

Freelance Python Developer & AI Engineer

Upwork

May 2024 – Present

Remote, Worldwide

- Delivered 6+ client projects across AI/ML, data science dashboards, object detection, and web development
- Built real-time competitor pricing scraper dashboard (Streamlit, BeautifulSoup, Plotly) with live deployment
- Developed COVID-19 AI forecasting dashboard with Prophet predictions and VADER news sentiment analysis
- Implemented deep learning object detection pipelines (TensorFlow/Keras/Flask) with REST API deployment
- Delivered ML-driven production planning optimisation and full-stack charity fundraising websites
- Technologies: Python, Streamlit, TensorFlow, Keras, Flask, Scikit-learn, Pandas, Prophet*

Python Tutor & Programming Instructor

Preply — preply.in/IRFANA6EN2110428510

2024 – Present

Remote, Worldwide

- Delivered 450+ one-on-one programming lessons covering Python, AI, machine learning, and computer science
- Mentored 59 students across diverse backgrounds and skill levels, from beginners to intermediate developers
- Conducted 445+ hours of live instruction; designed customised learning plans and practical coding exercises
- Maintained a 100% response rate and consistently delivered lessons adapting to individual student needs

Police Communication Officer

Punjab Safe City Authorities

Nov 2024 – Present

Lahore, Pakistan

- Monitor surveillance systems and live CCTV feeds for public safety and law enforcement operations
- Manage emergency calls and coordinate timely responses; utilise GIS mapping for precise incident location
- Maintain accurate incident logs, documentation, and real-time anomaly reporting

Data Analyst

Scout Talent Inc

Jan 2023 – Dec 2024

Remote, Canada

- Analysed large datasets using Python (Pandas, NumPy, Matplotlib) to derive actionable business insights
- Built automated data pipelines and interactive dashboards for stakeholder reporting
- Applied machine learning models for trend identification and predictive analytics

Website Developer

Jan 2020 – Oct 2024

- Designed and developed responsive websites using HTML, CSS, JavaScript, PHP, and MySQL
- Customised WordPress CMS and implemented SEO best practices for improved organic visibility

Content Writer

Humber College

Jan 2019 – Dec 2023

Remote, United States

- Produced research-backed content tailored to client briefs with strong editing and proofreading skills

EDUCATION

MS in Computer Science

COMSATS University of Information Technology

2021 – 2023

Sahiwal, Pakistan

CGPA: 3.25 / 4.0 **Thesis:** Fabric Design Defect Detection using Deep Learning (CNN-based quality control in textile manufacturing)

BS in Bioinformatics

COMSATS University of Information Technology

2017 – 2021

Sahiwal, Pakistan

CGPA: 2.7 / 4.0 **Thesis:** Multi-Epitope Vaccine Design for Coronaviruses — published in *Microorganisms* (IF 4.5)

TECHNICAL SKILLS

Languages	Python, PHP, JavaScript, SQL, C++, Java, HTML, CSS
AI / ML	TensorFlow, Keras, PyTorch, Scikit-learn, Hugging Face, LangChain, RAG Pipelines, Prophet, VADER, OpenCV
Web Frameworks	Flask, Django, FastAPI, WordPress, REST APIs
Data Science	Pandas, NumPy, Matplotlib, Plotly, Seaborn, Streamlit, Jupyter Notebook
Databases	MySQL, SQLite, MongoDB, Redis
DevOps / Tools	Git, GitHub, Docker, cPanel, Linux, VS Code
Other	BeautifulSoup, Selenium, BioPython, Molecular Docking, GIS, UI/UX Design

SELECTED PROJECTS

BitWithBite AI Platform

bitwithbite.com

Python • PHP • MySQL • RAG • JWT • Admin Dashboard

Full-stack AI-powered EdTech platform with coding challenges, AI mentor, skill trees, resume analyser, and multi-role admin panel — built entirely solo.

AI Chatbot Suite

Portfolio

PHP • JavaScript • Keyword NLP • RAG • Sentiment Analysis • Ticket System

Four production-ready chatbot systems: **AI FAQ Bot** (keyword matching + confidence scoring + email escalation), **AI Website Chatbot** (lead capture, intent detection, product recommendations), **AI Customer Support Bot** (ticket creation, sentiment detection, human handoff), and **AI Internal Company Assistant** (document upload, RAG-style keyword retrieval, source citations, role-based PIN access). No paid API required.

BitWithBite AI Tools Suite

bitwithbite.com/ai-tools

PHP • JavaScript • LLM API • Adaptive Learning • Spaced Repetition

8 live AI-powered web tools built for the BitWithBite platform: AI Concept Explainer, AI Tutor Pro, AI Math & Physics Solver, AI Adaptive Quiz Engine (Bloom's Taxonomy + spaced repetition), AI Assessment Checker, AI Homework Helper Pro, AI Learning Roadmap Generator, and AI Paper Summarizer.

cPanel AI Suite — PHP Conversions

bitwithbite.com/ai-tools

PHP • Chart.js • PHP GD • cURL • VADER Sentiment • cPanel

Converted three Python/Streamlit/TensorFlow projects to production-ready PHP tools — zero API cost: **COVID-19 Dashboard** (disease.sh API + 14-day forecast + keyword sentiment), **Competitor Pricing Scraper** (cURL scraping + Chart.js + rule-based market analysis), and **Image Analyser** (PHP GD colour extraction, EXIF, brightness — replaces TensorFlow).

AI Resume Analyzer — cPanel Edition

Portfolio

FastAPI • Python • TF-IDF • PyPDF2 • a2wsgi • cPanel Passenger

Full resume analysis pipeline (ATS scoring, skill gap, template cover letter, 8-week roadmap, salary prediction) converted from Ollama + sentence-transformers to pure-Python TF-IDF similarity — zero API cost. Deployed on cPanel via Phusion Passenger.

BitWithBite AI RAG Assistant — cPanel Edition

Portfolio

FastAPI • RAG • Python • Keyword Retrieval • a2wsgi • cPanel Passenger

Converted production RAG chatbot from FAISS + Ollama to keyword-based retrieval — returns matching document excerpts directly. Supports PDF/DOCX upload, conversation history, knowledge-gap logging, and cPanel deployment. Zero ML/API dependencies.

Fabric Design Defect Detection

MS Thesis

Python • TensorFlow • CNN • Computer Vision • OpenCV

Deep learning CNN model for automated quality control in textile manufacturing.

Multi-Epitope Vaccine Design

BS Thesis • Published

Python • BioPython • Molecular Docking • Immunoinformatics

Novel multi-epitope coronavirus vaccine candidate designed using in silico approaches. Published in *Microorganisms* (IF 4.5).

PUBLICATION

Rasheed MA, Raza S, Alonazi WB, Ashraf MA, Navid MT, **Aslam I**, Iqbal MN, Rahman SU, Riaz MI.

Design and Assessment of a Novel In Silico Approach for Developing a Next-Generation Multi-Epitope Universal Vaccine Targeting Coronaviruses.

Microorganisms 2023, 11(9):2282. Impact Factor: 4.5.

DOI: 10.3390/microorganisms11092282

Role: Experimentation — conducted experiments, contributed to data generation, assisted in drafting and revising the manuscript.

CERTIFICATIONS

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| <ul style="list-style-type: none">• Python Essentials 1 & 2 — Cisco / PCEP• Python (Basic) — HackerRank (Dec 2025)• Python Course — GeeksforGeeks (2025)• Machine Learning & AI Data Science• Software Engineer — HackerRank• Problem Solving (Basic) — HackerRank• Building Database Agent — Analytics Vidhya• Amazon VA Workshop — TechStep IT• Introduction to AI — Google/Coursera (Nov 2025) | <ul style="list-style-type: none">• Maximize Productivity With AI Tools — Google/Coursera (Nov 2025)• Stay Ahead of the AI Curve — Google/Coursera (Nov 2025)• C++, Java, PHP, HTML, JavaScript — Sololearn• DigiSkills Certificate — eHunar• IC3 Digital Literacy• UI/UX Graphic Design• Digital Marketing — Google Fundamentals |
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AWARDS & SCHOLARSHIPS

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- **eHunar Scholarship** — Hunarmand Kamyab Jawan Program, Government of Pakistan (Active)
 - **PEEF Scholarship** — Punjab Educational Endowment Fund (2015) — academic excellence, intermediate
 - **EHSAAS Scholarship** — Government of Pakistan (2019) — academic excellence, BS Bioinformatics
 - **Biosafety & Biosecurity Seminar** — Certificate of Participation, NTRL / COMSATS University (Nov 2018)

LANGUAGES

Urdu — Native **English** — Fluent (Professional)