Mohammad Pathan

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SUMMARY

Passionate and impact-driven software engineer with a strong foundation in AI, full-stack development and cybersecurity. Hold an Honours degree (cum laude) in Information Technology with a specialization in Artificial Intelligence and Cybersecurity. Experienced in penetration testing, AI/ML, system design and development, and university-level teaching, with the ability to deliver scalable, high-quality, real-world solutions. Currently working in the cybersecurity domain while actively expanding software engineering expertise.

TECHNICAL SKILLS

Languages & Frameworks: Java, JavaScript, Python, HTML/CSS, C++, C#, Haskell, Assembly, SQL, NoSQL, Node.js

Databases: MySQL, MongoDB, PostgreSQL, GraphQL

DevOps & Tools: Git, Docker, AWS (EC2, CloudFormation, S3)

Cybersecurity: Penetration testing a range of web application's and service's tech-stacks

AI/ML: Neural Networks , Computer Vision (CNNs), TensorFlow, PyTorch

PROJECTS

Plant Disease Detection Using CNNs   2023
Honours Project   *Java, Spring API*
- Built a CNN-based image classification system from scratch for identifying plant diseases.
- Implemented a full-stack solution, mobile app for image upload/capture and desktop UI for training & debugging.
- Project received a Best Honours Project award during UJ Projects Day 2023.

Byte The Pathfinder - AI Game Agents Using A* Algorithm   2023
AI Agent Project   *Java*
- Implemented an A* goal-based AI bot navigating a maze to collect artifacts.
- Built virus agents with autonomous A* chasing and communicating behaviour.

BabySteps: Paediatrician-Parent Communication Platform   2022
Third-Year Project   *C#, Java, MSSQL*
- Developed a cross-platform system, web and mobile application, to connect paediatricians and parents.
- Integrated scheduling, messaging, and child health tracking features.
- Project received award for Best Project Video during UJ Projects Day 2022.

EXPERIENCE

Cybersecurity Consultant   Feb 2024 – Present
MWR CyberSec   *Sandton, South Africa*
- Perform penetration testing across enterprise web applications and services.
- Collaborate on service innovation and research initiatives to enhance internal tooling.
- Deliver actionable reports and effectively communicate findings to clients.

Cybersecurity Intern   July 2023
MWR CyberSec   *Sandton, South Africa*
- Gained hands-on experience conducting ethical hacking exercises simulating real-world attacks.
- Followed by a detailed report outlining discovered vulnerabilities and corresponding remediation.

Teaching Assistant & Tutor   Feb 2023 – Nov 2023
University of Johannesburg   *Johannesburg, South Africa*
- Provided teaching assistance to lecturers for multiple courses, including Informatics 1B, Computer Science 2A, 3A, and 3B. Responsibilities included marking weekly practical assignments, research papers, and semester tests.
- Offered tutoring support to students for Informatics 1A, focusing on coursework and coding assignments.

Freelance Software Developer   2023 – Present
Self-Employed   *Johannesburg, South Africa*
- Design and develop responsive websites tailored to client requirements.
- Manage full project lifecycle - from requirements gathering and design, development to deployment, and client handover.

EDUCATION

Honours in Information Technology (Cum Laude)   2023
University of Johannesburg

Bachelors in Computer Science and Information Technology   2020-2022
University of Johannesburg

CERTIFICATIONS

Practical Web Pentest Professional (PWPP)   June 2025
TCM Security

AWARDS

Best Honours Project   2023
University of Johannesburg

Best Third Year Project Video   2022
University of Johannesburg

Top 10 Informatics 1A   2020
University of Johannesburg