

# ASWIN P T

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## Software Developer

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### PROFESSIONAL SUMMARY:

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Machine Intelligence graduate student at Digital University Kerala with strong foundations in AI/ML, deep learning, and computer vision. Experienced in implementing research papers, building end-to-end ML pipelines, and optimizing models for real-world performance. Skilled in Python, PyTorch, OpenCV, and GPU-accelerated development. Demonstrated ability to work with complex datasets, experiment systematically, and derive meaningful insights. Driven by discipline, consistency, and a strong research mindset.

### EDUCATION:

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M.Sc. in Computer Science (Machine Intelligence)

Kerala University of Digital Sciences, Innovation and Technology, Thiruvananthapuram  
2024 – 2026

B.Sc. in Computer Science

College of Applied Science IHRD, Kozhikode  
Completed: 2024

### TECHNICAL SKILLS:

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- **Programming:** Python, C, C++
- **AI/ML:** Deep Learning, Computer Vision, Federated Learning, LLM
- **Frameworks:** PyTorch, TensorFlow, OpenCV
- **Tools:** Google Colab, Kaggle, VS Code, PyCharm
- **Databases:** PostgreSQL, SQL
- **Web:** HTML, CSS, JavaScript, Django
- **Other:** Data Analytics, Cognitive & Soft Computing

### PROJECTS:

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#### Adaptive Confidence Modeling for SHADER-Based 3D Human Body Shape Estimation (Ongoing)

Python, PyTorch, OpenCV, SMPL

Developing an improved SHADER pipeline for monocular 3D human shape estimation under loose clothing. Proposed a dynamic, image-driven confidence model to replace the original global- $\sigma$  formulation. Achieved 20–25% lower confidence-prediction error on 9,656 dressed-human images with statistically significant gains ( $p < 0.000001$ ). The method produces more stable confidence maps and improves downstream SMPL estimation without extra data or architectural changes.

#### Deep Learning-Based Prediction of RNA Secondary Structures

Python, CNN, RNN

Designed a model to predict RNA secondary structures from sequences. Achieved good training accuracy and F1-score on validation using dot-bracket notation.

#### PM2.5 Air Quality Forecasting

Python, TensorFlow, Pandas, Seaborn

Developed a TensorFlow-based LSTM model to forecast 7-day PM2.5 levels in Mumbai, New Delhi, Hyderabad, and Chennai. Applied data preprocessing techniques including imputation, normalization, and feature encoding. Conducted exploratory data analysis and visualized pollution patterns.

#### Manglish WhatsApp Chatbot using Llama-3 (Ollama) and Node.js

Node.js, Ollama (Llama-3), WhatsApp-web.js

Built an offline Manglish (Malayalam-English) WhatsApp chatbot using a locally hosted Llama-3 model via Ollama. Integrated real-time messaging, designed a prompt-based personality engine, and automated chat flow using Node.js. Eliminated cloud dependency through local API calls and crafted informal, emoji-rich responses simulating a Malayali teenager's tone.