



# MONISHWARAN C

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## Professional Experience

### Bapon IT Services - Software Engineer

July 2025 - Present

#### SkillfulSense - Web Assessment Platform

Led the development of a comprehensive web assessment platform (live at skillfulsense.com) offering topic-based assessments, AI-powered interviews, and personalized learning pathways with integrated certification.

- Architected and developed 40+ RESTful API endpoints using FastAPI with decoupled microservices architecture
- Integrated dual payment gateways (Razorpay for India, Stripe for global markets) for seamless transactions
- Implemented AI-powered assessment generation using DeepSeek-Chat for MCQ and coding challenges
- Built real-time AI interview system with Agora meeting channels, GPT-4o, and AWS Polly for voice synthesis
- Developed intelligent voice assistant using GPT-4o-mini-realtime-preview accepting audio tokens directly for faster responses
- Created post-session helpful links feature powered by GPT-4.1 with web search capabilities
- Deployed backend across 6 Lambda functions following decoupled architecture; voice agent on EC2 with auto-scaling
- Integrated Google Custom Search API and YouTube Data API for curated free course recommendations
- Calculated infrastructure costs and determined minimum user threshold for cost recovery
- Managed AWS Cognito for user authentication and SES for email notifications

Python FastAPI MongoDB AWS Lambda EC2 GPT-4o Agora Razorpay Stripe

### Bapon IT Services - Backend Developer Intern

December 2024 - June 2025

#### Hyr-Sense - AI Interview Platform

Enhanced existing AI-powered interview platform with cloud recording capabilities and real-time processing features.

- Implemented cloud recording functionality using Agora's API, storing interview sessions on AWS S3
- Developed automated recording triggers integrated with start/end interview endpoints
- Configured secure AWS credentials management for cloud storage operations

Python FastAPI MongoDB Agora SDK AWS S3 React

#### SenseScript - Meeting Transcription & Summarization

Built serverless backend for meeting audio processing application enabling transcription and intelligent summarization.

- Designed complete RESTful API architecture using FastAPI
- Integrated AWS Transcribe for accurate audio-to-text conversion
- Implemented GPT-4o for generating concise meeting summaries
- Deployed serverless backend on AWS Lambda with API Gateway
- Configured AWS Cognito for secure user pool management

FastAPI AWS Lambda AWS Transcribe GPT-4o Cognito MongoDB

#### HRSuite - Timesheet Management Portal

Developed comprehensive HR management system replacing Zoho People with custom-built solution for organizational needs.

- Engineered 90+ API endpoints handling timesheets, leave management, attendance, documents, projects, and jobs
- Implemented role-based access control (RBAC) for secure multi-level permissions
- Utilized PostgreSQL with SQLAlchemy ORM for optimized database operations
- Configured AWS Cognito SSO integration with Azure Directory for seamless authentication
- Set up AWS SES for automated email notifications and alerts

FastAPI PostgreSQL SQLAlchemy AWS SES Cognito Azure AD

## Personal Projects

#### Pipe Diameter Optimizer (opti.mklabs.work)

Developed web application automating water distribution pipeline diameter optimization, reducing manual iteration time by 80%.

- Built optimization algorithm considering velocity constraints, residual head requirements, and endpoint specifications
- Created FastAPI endpoints for sample template download and optimization processing
- Implemented Excel file manipulation using Pandas for input/output handling
- Deployed backend on AWS Lambda with S3-hosted frontend
- Configured Route 53 for custom domain DNS management

Python Pandas FastAPI AWS Lambda S3 Route 53

## Education

#### Bachelor of Engineering in Mechanical Engineering

A.C.G.C.E.T, Karaikudi | 2019 - 2023 | CGPA: 8.1/10

#### Higher Secondary Certificate (HSC)

SVS Matriculation Higher Secondary School, Muthupet | 2018 - 2019 | Percentage: 85%

#### Secondary School Leaving Certificate (SSLC)

SVS Matriculation Higher Secondary School, Muthupet | 2016 - 2017 | Percentage: 97%

## Certifications

#### AWS Certified Cloud Practitioner

Score: 96.2%

## Technical Skills

Python FastAPI MongoDB PostgreSQL SQLAlchemy AWS (Lambda, EC2, S3, SES, Cognito, Transcribe, Polly) GPT-4o DeepSeek OpenAI Whisper Agora SDK React Razorpay Stripe Git/GitHub Pandas RESTful APIs Microservices Serverless Architecture