

Selvakumaran B

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Profile

Dynamic and results-driven **Cloud & Machine Learning Engineer** with strong expertise in **AWS Cloud Computing, Data Analytics, and Full-Stack Development**. Experienced in designing and deploying scalable cloud solutions, optimizing infrastructure, and leveraging data-driven insights for decision-making. Proficient in **Python, SQL, Flask/Django, TensorFlow/Keras, and front-end technologies (HTML, CSS, JavaScript)** with hands-on experience in building AI-powered applications, predictive analytics models, and IoT-based systems. Recognized for leadership roles such as **Chairperson of ACM Student Chapter** and **Treasurer of SPARKS Association**, demonstrating strong collaboration, project execution, and organizational skills. Certified in **AWS, Data Analytics, Front-End Development, and Embedded Systems**, with proven ability to integrate cloud, AI, and software engineering expertise to deliver innovative and impactful solutions.

INTERNSHIP

AWS Cloud Computing, One Data, Coimbatore

Completed an internship in AWS Cloud Computing at "OneData", gaining hands-on experience with core AWS services and performing basic cloud operations. Developed foundational skills in cloud infrastructure, EC2, S3.

Cloud Computing , CodeTech Solutions, Coimbatore

Completed an internship at "CodeTech Solutions", deepening my AWS expertise with hands-on experience in services such as IAM, CloudFormation, RDS, and CloudWatch. Focused on infrastructure automation, database management, and system monitoring in cloud environments.

Data Analytics, CodeTech Solutions, Coimbatore

Completed an internship in Data Analytics at "CodeTech Solutions", gaining foundational knowledge in data preprocessing, exploratory data analysis (EDA), and data visualization. Worked with tools like Excel, SQL, and Python libraries such as Pandas and Matplotlib.

Data Analytics , Unified Mentor, Coimbatore

Completed a Data Analytics internship at "Unified Mentor", advancing skills in data wrangling, statistical analysis, and dashboard creation. Gained hands-on experience with SQL, Power BI, and Python libraries like NumPy and Seaborn for data-driven decision making.

Technical Skills

~**Front-End Developer:** HTML5, CSS3, and JavaScript, Frontend Frameworks , Libraries & API Integration

~**AWS Cloud:** EC2,Lambda,VPC,CloudFront, S3,API Gateway

~**Machine Learning:** SQL ,Pytorch ,TensorFlow

PROJECTS

Farmer's AI Chat Assistant

Developed an AI-based chatbot for farmers to access real-time crop prices, ideal climate conditions for cultivation, sales insights, and plant disease detection with treatment suggestions. Used Python and Dialogflow for natural language processing, integrated APIs for weather and pricing data, and implemented image classification with TensorFlow/Keras for disease detection. Built the backend using Flask with Firebase/MongoDB for data management, focusing on user-friendly design and multilingual support.

Bone Fracture Detection

Designed an AI-based model for accurate detection and classification of bone fractures using medical imaging data. Utilized deep learning techniques with convolutional neural networks (CNNs) in Python, leveraging frameworks like TensorFlow/Keras. Focused on improving diagnostic accuracy through image preprocessing, model training, and performance evaluation on X-ray datasets.

Flight Ticket Price Prediction

Developed an AI model to predict flight ticket prices using historical data and market trends. Employed regression techniques and machine learning algorithms such as Random Forest and XGBoost in Python. Performed data cleaning, feature engineering, and model tuning to improve prediction accuracy. Tools used include Pandas, Scikit-learn, and Matplotlib for analysis and visualization.

Private Jet Booking Website

Developed a user-friendly web application for seamless private jet booking and personalized travel experiences. Designed intuitive front-end interfaces using HTML, CSS, and JavaScript, and implemented backend functionality with Flask/Django. Integrated booking forms, user authentication, and real-time availability features to enhance user experience and streamline the reservation process.

Lightweight Cluster Head Selection Mechanism for Low-Power IoT Devices(CHD)

Developed a lightweight, energy-efficient algorithm for cluster head selection in low-power IoT networks. The algorithm selects cluster heads based on residual energy, communication cost, and node proximity to balance network load and extend device lifespan. Designed to minimize computational overhead, it is suitable for resource-constrained devices. The project involved modeling and simulation using Python and MATLAB to evaluate performance against existing methods. Focus areas included optimizing energy consumption, improving communication reliability, and ensuring scalability. This solution enhances data aggregation and transmission efficiency within clustered IoT architectures.

Front-End Projects

Title: Portfolio

Description: Developed a responsive personal portfolio website to showcase skills, projects, and experience. Built with HTML, CSS, and JavaScript, featuring smooth navigation, interactive elements, and mobile-friendly design to create a professional online presence.

Title: To-Do List

Description: Created a dynamic To-Do List web application using JavaScript, HTML, and CSS. Implemented features like adding, editing, and deleting tasks, with local storage integration for persistent data, focusing on usability and clean, intuitive UI.

CERTIFICATIONS

- ~Front End And Web Development , IBM
- ~System Thinking and Skill Development , KrishTech
- ~Embedded System Design, IIT Madras
- ~NVIDIA - 10Days GPU Accleration Computing Codeathon, NVIDIA
- ~Acquiring Data Analytics, Nasscom
- ~Data Analytics With Python, NPTEL
- ~Social Network Analysis , NPTEL
- ~Python for Data Analysis(Pandas & NumPy), Coursera/Google
- ~Intro to MangoDB , MangoDB(Inc)

Extra-curricular activities

- ~Chair Person, ACM Students Chapter(2025-2026), KPRIET
Chairperson of the ACM Student Chapter at KPRIET (2025–2026), leading technical initiatives, workshops, and student engagement activities. Demonstrated leadership, event coordination, and collaboration with industry professionals and peers
- ~Treasurer, SPARKS Association(2025-2026), KPRIET
- ~Vice Chair, ACM Students Chapter(2024-2025), KPRIET
- ~Student of the Year, SPARKS Association(2024-2025), KPRIET