

AARTHI VASUDEVAN

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EDUCATION

Texas A&M University, College Station, USA

Master of Science in Computer Engineering

Aug 2022 - May 2024

CGPA: 3.9/4

• *Courses:* Analysis of Algorithms, Machine Learning, Artificial Intelligence, Data Mining and Analysis, Information Storage and Retrieval

SSN College of Engineering, Anna University, Chennai, India

June 2016 - April 2020

Bachelor of Engineering in Electronics and Communication

CGPA: 9.16/10

WORK EXPERIENCE

Texas A&M University

Graduate Research Assistant

College Station, USA

Sept 2022 - May 2023, Sept 2023 – Present

- Engineered numerous full-stack web applications utilizing Python, Node.js, NoSQL databases such as MongoDB and DynamoDB, Django and Flask frameworks for RESTful APIs, dockerized and deployed the same on AWS Elastic Compute Cloud (EC2).
- Deployed a digital-twin city 3D model on AWS, achieving a remarkable 60% improvement in both latency and expenditure optimization.
- Implemented ML-driven algorithms for object detection and classification using OpenCV, trained on a dataset of 20,000 images, achieving a 78% accuracy in detection.
- Executed web scraping on the OSHA website, utilizing Python, BeautifulSoup and Pandas, to extract and organize 2000 tabulated records.

Hewlett Packard Enterprise

Software Engineer Intern

San Jose, USA

May 2023 – Aug 2023

HPE GreenLake for Private Cloud Business Edition (PCBE) Pricing Calculator

- Leveraged PostgreSQL to design a durable database for custom workloads and rate cards. Crafted APIs using Django ORM, achieving a 50ms response time and integrated them with React to deliver responsive recommendations and dynamic pricing estimates.

TAPAS (Table-based Pretraining and Answer selection) - based query interface for tabular data

- Optimized and fine-tuned TAPAS, a Bert-based weakly supervised question-answering NLP model to extract insights from a structured dataset of system specifications. Achieved an accuracy of 83.25% through rigorous hyperparameter tuning, and deployed it as a Python Streamlit application providing an intuitive interface for seamless exploration and analysis.

Tata Consultancy Services

Software Developer

Chennai, India

Aug 2020 - Aug 2022

- Constructed a Java microservices-based crew scheduling system with Spring Boot for Carnival Cruise Lines, built and documented the APIs, delivering a 75% drop in scheduling conflicts and boosting crew productivity by 15%.
- Engineered serverless AWS applications, harmonizing computing, storage and networking services. Created AWS CloudFormation templates to deploy them on varied environments through DevOps practices. Procured a 30% decrease in infrastructure cost.
- Migrated heavy on-premises applications to the cloud and worked on a comprehensive hybrid infrastructure. Simultaneously, led the development of a robust hybrid infrastructure, ensuring smooth integration and scalability for enhanced performance.
- Developed sophisticated back-end services supporting cloud applications using Python (boto3) and Java SDKs, contributing to a notable decrease in API turnaround and a commendable improvement in overall application responsiveness.

Kaashiv InfoTech

Machine Learning Intern

Chennai, India

May - June 2019

- Devised an advanced predictive model for weather forecasting using linear regression in Python, achieving an 85% accuracy rate.

PROJECTS

Parallelizing Strassen's Matrix-Multiplication Algorithm | C++, CUDA, OpenMP

Dec 2023

- Implemented shared-memory parallelization with OpenMP tasks to handle recursive calls in Strassen multiplication.

Data Mining Project | R, Machine Learning

May 2023

- Performed supervised learning attaining 72.5% accuracy and unsupervised learning on datasets with 1000 observations and 780 variables.

Event Management Application (EventNXT) | Full Stack Development, Ruby on Rails

Dec 2022

- Enhanced a real-time event-handling app by integrating new user-friendly features and optimizing response time by 20%.

Prediction of Uber fares | Machine Learning, Regression Models, Python

Dec 2022

- Studied the Uber ride datasets, applied different regression algorithms and built a cab fare prediction model with a precision of 90%.

Intelligent Traffic Signal Control System – [IEEE Publication](#) | Machine Learning, OpenCV, Python

May 2020

- Estimated traffic densities through HAAR Cascade classifier, achieved 70% precision and constructed an adaptive traffic signal solution.

Smart Spying Robot with Thermal Vision – [IEEE Publication](#) | Python, Mobile Application, Firebase

Dec 2019

- Fabricated a web app controlled robot, streamed the live data over a virtual network, and stored the timestamped results on the cloud.

TECHNICAL SKILLS

• Programming & OS	Python, Java, C, C++, Data Structures, Ruby, Linux
• Cloud platforms	AWS, Microsoft Azure, Docker, Firebase
• Web Development	RESTful APIs, Spring Boot, HTML, CSS, JavaScript, Node.js, React, Django, Flask, Streamlit
• Machine Learning	Pandas, Numpy, Keras, Tensorflow, PyTorch, NLP, BERT, Transformers, TAPAS
• Data Mining	Statistical Analysis, Classification, Regression, Data Processing, Modeling
• Databases	MySQL, PostgreSQL, DynamoDB, MongoDB
• CI/CD	GitHub, Azure DevOps, AWS CodeCommit

CERTIFICATIONS AND COURSES

• AWS Certified	Developer – Associate	2022
• Microsoft Certified	Azure Fundamentals, Azure Data Fundamentals & Azure AI Fundamentals	2022
• Udemy	Python for Data Science and Machine Learning Bootcamp, DevOps, CI/CD for Beginners	2021
• Coursera	SQL for Data Science and Neural Networks and Deep Learning	2020
• NIIT Certified	C Programming	2016

AWARDS AND ACHIEVEMENTS

• 'Star of the Quarter Award', Tata Consultancy Services	2022
• 'ECE Department topper', 'Academic merit scholarships', SSN College of Engineering & 'University Rank Holder', Anna University	2021