AARTHI VASUDEVAN

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Seeking Full-time SDE positions from June 2024 with 3.5+ years of experience; Willing to Relocate.

EDUCATION

Texas A&M University, College Station, USA — **Aug 2022 - May 2024**
Master of Science in Computer Engineering — *CGPA: 3.9/4*
- *Courses*: Distributed Systems and Cloud Computing, Analysis of Algorithms, Information Storage and Retrieval, ML, AI, Data Mining

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 — **College Station, USA**
Graduate Research Assistant | **Python, Node.js, Django, Flask, NoSQL, REST APIs, AWS, ML, Computer Vision** — *Sept 2022 – 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 S3, ECS, EC2, and Fargate.
- Deployed a digital-twin city 3D model on AWS, achieving a 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, obtaining 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 — **San Jose, USA**
Software Engineer Intern | **REST APIs, Python, Django, PostgreSQL, React.js, NLP, LLM, Streamlit** — *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, accomplishing 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 hyperparameter tuning, and deployed it as a Python Streamlit application providing an intuitive interface for seamless exploration and analysis.

Tata Consultancy Services — **Chennai, India**
Software Developer | **Java, Python, AWS, Job Scheduling, Microservices, Cloud Migrations** — *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, boosting crew productivity by 15%, and reducing infrastructure costs by 30%.
- Engineered serverless AWS applications, harmonizing computing, storage, security and networking services mainly AWS ECS, S3, IAM, CloudFront, ACM, API Gateway, Lambda, DynamoDB, RDS, SQS, and SNS. Configured multiple triggers to schedule jobs leveraging AWS Batch and DynamoDB Streams. Created and deployed AWS CloudFormation templates on varied environments through Azure DevOps.
- Led the migration of heavy on-premises applications to a hybrid cloud infrastructure, while also developing a robust cloud platform for seamless integration and scalable performance improvements.
- 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 — **Chennai, India**
Software Developer Intern | **ML, Regression Models, Python** — *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, ML, Statistical Analysis — *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 | ML, 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 | ML, 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++, R Programming, 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, PySpark, Numpy, Keras, Tensorflow, PyTorch, NLP, BERT, LLMs, Transformers, TAPAS
- **Databases**   MySQL, NoSQL, 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, Neural Networks and Deep Learning — *2020*

AWARDS AND ACHIEVEMENTS

- 'Star of the Quarter Award', Tata Consultancy Services — *2022*
- 'Academic merit scholarships', SSN College of Engineering & 'University Rank Holder', Anna University — *2021*