

# Aswin Kumar J

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## Summary

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Experienced Python Developer with over 7 years of work encompassing roles such as Senior Software Engineer and Research Assistant. Successfully deployed and fine-tuned advanced models for customer support, created robust web applications, and developed innovative IoT solutions. Skilled in using technologies like Python, ROS, Docker, and various machine learning frameworks to enhance product efficiency and functionality. Seeking to leverage extensive experience to contribute to cutting-edge projects in a dynamic environment.

## Education

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**University of Maryland, Baltimore County**  
MS in Information Systems, major in AI

**Baltimore, MD**  
Aug 2023 - Present

## Skills

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Python3, AWS EC2, S3, Bedrock, ELB, RUST, Microservices, Multithreading, PyTorch, TensorFlow, HuggingFace, Docker, Next.js, React.js, Pinecone, Stripe API, ROS & ROS2, OpenCV, LLM, Transformer, Kafka, API, HTML5, CSS3, Javascript, JSON, GIT, GitLab, SQL, MongoDB, Jupyter Notebook, Google Colab, VsCode, Shell, Microsoft Office Suite, CI/CD

## Work Experience

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### Headstarter AI

**Remote**

#### *SWE Fellow*

Jul 2024 - Present

- Deployed the RAG-trained Llama-3.1 8b model chatbot, improving Delta Airlines' customer support efficiency by 40%.
- Integrated multi-language support, feedback mechanisms, and user authentication into the chatbot using Clerk, expanding its functionality.
- Orchestrated the implementation of coding, design, and deployment best practices using EC2, fostering a collaborative team environment.
- Built and deployed a feature-rich pantry tracker app in Vercel, enabling item addition, deletion, updating, and searching functionalities with Next.js, React.js, and Firebase.

### University of Maryland, Baltimore County

**Baltimore, MD**

#### *Research Assistant*

Nov 2023 - Present

- Enhanced the efficiency of swarm robots using Python, ROS, and ROS2, integrating with Boston Dynamics SPOT and Clearpath's Husky.
- Utilized OpenCV to capture and process images from video streams, optimizing image interpretation with a transformer-based GPT model.
- Pioneered new navigation techniques by integrating SPOT SDK and Garmin GPS module, advancing robot positioning capabilities.
- Fine-tuned LLM3-codellama and instruct models on edge devices with RASA NLU, creating chatbots that generate Python code from audio inputs, boosting efficiency by 35%.

### Vagus Technologies Inc

**Trichy, India**

#### *Senior Software Engineer*

Jul 2018 - Aug 2023

An in-house Applicant Tracking System (ATS) is a software application used by end clients and human resources professionals to streamline and automate the recruitment and hiring process.

- Developed robust, scalable, and secured web applications for the applicant tracking system to ensure the continuity of business processes and client satisfaction.
- Designed and configured caching database and backend applications, improving application efficiency by 30%.
- Consumed APIs while utilizing Python requests to read numerous JSON reports and file automatic bugs for intermittent bugs.
- Designed and implemented RESTful APIs to facilitate data migration from legacy systems to AWS cloud services. Utilized Docker for containerization, automating deployment processes on AWS EC2 and S3, and employed AWS Route 53 for scalable DNS management. This approach streamlined data transfer, reduced latency by 30%, and enhanced system scalability and reliability.

**Ahoy Systems Pvt Limited****Technical Associate****New Delhi, India**

Jan 2017 - Jun 2018

An IoT-based solution for the modern lifestyle including Automatic ATM Security, pH analysis reports Indian Government from various Sugar plants in India.

- Designed and developed a security system based on BeagleBone Black using various sensor data, improving ATM security and reducing incidents by 30%
- Executed a system to generate alerts to 3rd party security and maintenance teams, ensuring timely responses and reducing downtime by 20%
- Programmed cron jobs to execute shell scripts for raising alerts on web portals, enhancing system reliability and reducing manual intervention
- Integrated PTZ camera modules to IP networks and the system to capture incident photos, improving incident documentation and response efficiency.

**Projects**

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**Named-Entity Recognition using DistilBERT dataset**

Mar 2024 - May 2024

- Collaborated with a team of 4 members to create a model that can recognize the named entities from the DistilBERT dataset from Hugging Face as part of the coursework for Information Extraction.

**Popularity prediction of songs in Spotify**

Mar 2024 - May 2024

- Executed an ensemble model with a team of 4 to predict song popularity based on features like danceability, tempo, and energy, improving prediction accuracy.

**Online Shopping System using PL/SQL**

Nov 2023 - Dec 2023

- Collaborated as a team and developed an online shopping system using PL/SQL as part of the course curriculum for an Advanced DB project.

**Forced Alignment of words in Real-time News Channels.**

Mar 2016 - Jul 2016

**Certifications**

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- **Oracle Cloud Infrastructure 2024 Generative AI Professional**
- **AWS Certified Cloud Practitioner**

Jul 2024

Sep 2024