KARTHIK GANESAN

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Motivated, cross-functional robotics software engineer seeking full-time opportunity.

EDUCATION

Master of Science in Mechanical Engineering (MSME) *Aug' 18 – May' 20*
Arizona State University, USA (GPA: 3.96 / 4)
Notable Courses**:** *Modelling & Control of Robots, Perception in Robotics, Design optimization, Adv Systems Dynamics & Control.*

Bachelors in Aeronautical Engineering *Aug' 14 – May' 18*
Anna University, India (GPA: 8.03 / 10)

Coursera: Neural Networks and Deep Learning.
Amazon Web Services (AWS): Cloud Practitioner
CADD Centre Ltd: Diploma in Product Design and Analysis.

SKILLS

Robotics, Robot Operating System (ROS), Computer Vision, AI/ML - Deep learning, Product Design, Data Structures and Algorithms, Design of Experiments (DoE), 5S, Kaizen.

- Technical: AWS, Git, Blender, OpenCV, SQL, Qt, Gazebo (beginner), Selenium (beginner), Power BI (beginner).
- Programming: Python, C++, MATLAB, C, Terraform (beginner), CUDA (beginner).
- AWS: Batch, ECR, EC2, Lambda, S3, Sagemaker.

EXPERIENCE

Robotics Engineer *Nov' 21 - Present*
Tyson Foods, Springdale, AR

- Currently working on developing Machine Learning models using AWS Sagemaker, MXNET and TensorFlow to evaluate the detection performance using different libraries and models.
- Developed a system to generate comments based on code difference between two commits using OpenAI's Generative Pre-Trained Transformer 3 (GPT-3) along with Gitlab CI to assist with code-reviews and approvals.
- Worked on designing a system architecture using AWS for synthetic data generation involving AWS Batch, Lambda, S3, ECR, Python, Blender, Docker and Terraform.
- Developed a modular library Amazon Elastic Container Registry (ECR) image of Blender-Python for repetitive internal usage using Python, Docker, AWS and Gitlab CI.
- Built "Press Release and Frequently Asked Question" (PRFAQ) document for a project that include project requirements, high-level architecture diagram, Return on Investments (ROIs), milestones, and Quality Function Deployment (QFD) justifications.

Software Application Engineer *Jan' 21 – Oct' 21*
Duke University, Durham, NC

- Developed a software application for high-performance Optical Coherence Tomography (OCT) data-acquisition and processing using Python and Qt designer.
- Implemented and maintained Project Management System through Jira and Confluence for documentation and managing user requests.
- Collaborated with Stakeholders to decide on OCT software requirements and its feasibility.
- Provided support for projects & documentation using CUDA parallel programming, Qt Designer, C++, Jira, and Git.

Robotics Research Assistant *June' 19 – Dec' 20*
Arizona State University, Tempe, AZ

- Developed an autonomous vehicular robot and accompanying middleware in ROS using C++ to operate the bot in a physical testbed.
- Modeled the robot in SolidWorks, imported its URDF in Gazebo for simulation and developed a GUI using Qt designer and Python.
- Applied deep learning YOLOv3 (You Only Look Once) model in TensorFlow to train the bot to detect different objects.
- Developed and trained custom deep learning libraries to increase object detection accuracy to 97%.

PROJECTS

Autonomous Surveillance Drone **Project Link** *Jan' 19 – Apr' 19*

- Developed and operationalized autonomous drone movement and landing using Aruco markers, ROS, OpenCV and Python.
- Leveraged Neural Networks and Deep Learning Models for object detection and sending only the required frames of interest to the master node.