Abhishek Vishwakarma

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Education

California Sate Polytechnic University, Pomona **Aug 2023 – Present**
M.S in Computer Science: Advanced Algorithm Design & Analysis, Connected & Autonomous Vehicle

University of Mumbai, Mumbai **Jul 2015 – May 2019**
B.E. in Information Technology: Big Data Analytics,Computer Networks,OS,AI,Image Processing,Data Structures

Technical Skills

Programming Languages: Python, Java, Go, Shell Script, JavaScript, C++, SQL, Typescript, HTML, CSS
Web Technologies: Webpy, Tornado, DJango, Flask, ReactJs, NodeJs, Bootstrap, RestAPI, FastAPI, SaaS, JSP, Servelet
Software & Tools: VsCode, Git, PyCharm, NetBeans, Kubernetes, Docker, Fluent-bit, AWS, GCP, Azure, OpenCV, Matlab

Experience

Ganpat and Manju Engineering Center, Cal Poly Pomona Enterprises

– ***Research Assistant, Autonomous Vehicle Lab*** **Present**

- Led a high-performing team advancing Autonomous Vehicle technology in Dr. Bahr's research lab.
- Refactored code, migrating ROS-based code from C++ to Python for enhanced efficiency and maintainability.
- Mitigated networking issues for autonomous vehicles and designed network models for optimal functionality.

Protegrity India

– ***Software Engineer*** **Apr 2022 – Aug 2023**

- Independently owned a release for container-image of DSG for GCP, reducing sprint workload for timely release.
- Demo'd POC transitioning from HTTP to Emissary Ingress/Envoy in MicroK8s achieving 30% better performance.
- Offered valuable insights during the migration of the product's security architecture to a microservices framework.
- Optimized codebase by removing unused code and fixing broken function calls, leading upto 10% code coverage increase.
- Researched the migration of data security modules to AWS Lambdas, incorporating S3 for temporary storage.
- Diligently fostered junior developer growth and productivity through consistent guidance across multiple sprints.

– ***Associate Software Engineer*** **Apr 2020 – Apr 2022**

- Developed a Python-based feature for Data Security, enabling PDF content extraction with detokenization while minimizing data loss, visibility issues. Achieved a 50% efficiency to facilitate customer onboarding.
- Developed cutting-edge data security software on AWS, GCP, and Azure, employing Kubernetes for orchestration.
- Engineered cloud-based security solutions for seamless deployment and scalability, fortifying data protection and privacy
- Streamlined product code-base upgrade from Python 2.7 to 3.10, adeptly handling bytes/string migration challenges.
- Automated 50+ API tests across 30+ pages using Postman to identify and report Web UI integration bugs.
- Streamlined local build and deployment on Windows by orchestrating with Docker in WSL boosting productivity.
- Authored new unit tests & increased code coverage by almost 20% for multiple releases of Data Security Gateway.
- Offered rotational on-call support and led root cause analysis for issues across QA, UAT, and Production environments.

– ***Trainee Software Engineer*** **Jun 2019 – Apr 2020**

- Built and deployed auto-scaling based on cpu metrics in kubernetes cluster hosting a file protection software.
- Crafted and optimized unit tests to gain profound codebase insights and meticulously reported identified bugs.
- Contributed to minor feature releases and proficiently resolved reported bugs for the Data Security Gateway product.

Projects

Lane Change with object detection for Autonomous Vehicle | *OpenCV, Python, CPython, C, ROS* **Present**

- Led the collection of a diverse road image dataset, meticulously annotating lane markings and obstacles for training.
- Trained and implemented a deep learning model for lane detection using the collected dataset, achieving high accuracy.
- Spearheaded the configuration of an autonomous vehicle, integrating various sensors such as cameras and LiDAR, as well as actuators for steering, acceleration, and braking.
- Designed and implemented advanced control algorithms to interpret real-time lane detection and obstacle information, enabling the vehicle to make precise and safe driving decisions.

Fire Detection and Suppression with UAV | *Scitkit Learn, Yolov5, Google Colab, Python* **Present**

- Designed and implemented a machine learning model to enable fire detection and suppression feature for UAVs, achieving precise geological location in real-life situations.

Publications

A Biometric-Secure Evoting Sytem for Election Processes. | *ICECEIC*

- Published research on an advanced biometric-based authentication secure voting system employing Iris Authentication.
- Actively collaborated in the development and testing of an Arduino Uno-based electronic voting machine.