

# ABHISHEK VISHWAKARMA

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## Education

### California Sate Polytechnic University, Pomona

Aug 2023 – Present

*M.S in Computer Science: Advanced Algoritihms, Connected Autonomous Vehicle, Advanced Computer Architecture*

### 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, C++, Golang, Shell Script, JavaScript, SQL, Typescript, HTML, CSS

**Web Technologies:** Tornado, Django, Flask, ReactJs, NodeJs, Bootstrap, SaaS, RestAPI, FastAPI, AWS, GCP, Azure.

**Software & Tools:** VsCode, Git, PyCharm, NetBeans, Kubernetes, Docker, Fluent-bit, AWS, GCP, Azure, OpenCV, OpenSSL, Wireshark, Nmap, Metasploit.

**ML Frameworks and Python Libraries:** PyTorch, Scikit-learn, TensorFlow, Matplotlib, Pandas, Numpy, OpenCV

**Embedded Platforms:** Nvidia Jetson, Arduino Mega, Raspberry Pi

## Experience

### Ganpat and Manju Engineering Center, Cal Poly Pomona Enterprises

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

Present

- Led a high-performing team in assembling hardware components to build an autonomous vehicle from scratch.
- Refactored code, migrating ROS-based code from C++ to Python for enhanced efficiency and maintainability.

### Protegrity India

#### – *Software Engineer*

Apr 2022 – Aug 2023

- 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 infrastructure.
- Optimized codebase by removing unused code and fixing broken function calls, leading upto 10% code coverage increase.
- Experience maintaining Continous integrations and continous deployment(CI/CD) pipelines for new feature releases, leveraging technologies such as Kubernetes, Jenkins, Ansible, and Terraform, Docker.
- Proactively nurtured junior developer growth through guidance, showcasing leadership and interpersonal skills.
- Provided key insights during the migration of the product's security architecture to a microservices framework, collaborating with cross-functional teams.
- Navigated extensively the entire software development life cycle for product development, handling coding standards, code reviews, source control, builds, testing, and operations.

#### – *Associate Software Engineer*

Apr 2020 – Apr 2022

- Designed and implemented data-driven applications around mainstream network protocols such as HTTP, SMTP(TCP/IP), UDP, ICMP, and DNS with understanding of Linux network security, routing, firewall etc.
- Developed a Python-based product feature for backend services enabling PDF content extraction with detokenization while minimizing data loss, visibility issues. Achieved a 50% efficiency to facilitate customer needs for onboarding.
- Engineered cloud-based security solutions for data compliance and data privacy of information systems.
- 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 frontend integration bugs.
- Authored new unit tests & increased source code coverage by almost 20% for multiple releases of the product.
- Proficiently utilized monitoring tools like Splunk, Elastic Search, and td-agent to ensure effective system oversight and performance analysis.

#### – *Trainee Software Engineer*

Jun 2019 – Apr 2020

- Built and demonstrated kubernetes cluster auto-scaling based on cpu metrics showcasing communication skills.
- Crafted and optimized unit tests to gain profound code database 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 in computer vision tasks.

### 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.