KETHAN SAI PAVAN YEDDLA
SOFTWARE ENGINEER

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SUMMARY

- Software Engineer with around 4 years of experience in software development, backend technologies, threat protection systems, and cloud technologies, proficient in **Node.js, Java, Python, React.js, Spring Boot, and AWS**.
- Skilled in designing and developing scalable web applications, **RESTful APIs** using **Python Django**, **Spring REST**, and data-driven solutions, ensuring high performance, security, and user-centric experiences.
- Implemented **ETL pipelines** with **Python**, **Apache Airflow**, and **AWS Glue**, automating data workflows and improving data availability.
- Automated unit and integration tests with **Pytest**, **Selenium**, and **Postman**, improving test coverage and reducing defect rates in threat detection systems.
- Leveraged **TensorFlow** and **OpenCV** in **Python** for real-time video feed analysis, enhancing threat detection capabilities.
- Experienced in database management with **PostgreSQL**, **MySQL**, and **MongoDB**, optimizing query performance and ensuring data integrity in high-volume systems.
- Led the design and automation of **ETL processes**, optimizing data flow and transformation to support analytics and reporting initiatives.
- Proficient in leveraging **CI/CD pipelines** using **Jenkins**, **Docker**, and **Git**, automating deployment processes and minimizing downtime in agile environments.
- Strong collaborator with cross-functional teams, committed to delivering high-quality software solutions through **problem-solving**, **unit testing**, and **Performance optimization**.

EDUCATION

M.S. Computer Software Engineering   **Aug 2022 - May 2024**
Arizona State University, Tempe, AZ

B.Tech. Computer Science and Engineering   **Aug 2017 – May 2021**
Jawaharlal Institute of Technology Hyderabad, India

PROFESSIONAL EXPERIENCE

Arizona State University, USA | Client – Web4site
Software Engineer   **Jul 2024 - Current**

- Developed backend services using **Python with Django** for real-time threat detection, implementing **RESTful APIs** to enable seamless data exchange and reducing data processing time by 30%.
- Leveraged **TensorFlow and OpenCV in Python** for real-time video feed analysis, achieving 95% accuracy in detecting weapons, suspicious objects, and violent activities with high precision.
- Designed and developed responsive and interactive user interfaces using **JavaScript, TypeScript, React.js, and Bootstrap**, improving user satisfaction scores by 20% due to enhanced usability and real-time updates.
- Built real-time **microservices with Node.js and GraphQL**, increasing data processing efficiency by 40% and enabling instant communication with Python-based backend services for timely notifications and alerts.
- Implemented **ETL pipelines** using Python and Apache Airflow to automate data extraction, transformation, and loading from disparate sources, reducing manual processing efforts by 50% and improving data availability for analysis by 25%.
- Developed and optimized a hybrid database solution using **PostgreSQL** for structured data and **MongoDB** for real-time logs and metadata, resulting in 35% faster query performance and enhanced scalability for growing datasets.
- Integrated **AWS SDK for Python (Boto3)** with **AWS Rekognition** for real-time image/video analysis, **AWS Lambda** for automated alerts, and **AWS S3** for secure video storage, improving overall processing speed by 15% through efficient cloud utilization.
- Automated **ETL processes with Python scripts**, ensuring 99.5% data consistency across **PostgreSQL and MongoDB** environments and reducing ETLexecution time by 30%.
- Used **Docker and Kubernetes** for scalable containerized deployments, improving deployment efficiency by **45%** and ensuring **99% uptime** during peak traffic by leveraging auto-scaling.
- Developed and automated comprehensive **unit and integration tests** using **Pytest, Selenium, and Postman**, reducing defect rates by 50% and ensuringrobust real-time threat detection capabilities.
- Secured real-time threat detection systems by implementing **OAuth 2.0 and JWT** for authentication in Node.js and Python services, significantly reducing unauthorized access incidents by 90%.

Nagarro Software Pvt Ltd, India
Software Engineer   **Apr 2021 – Jul 2022**

- Developed scalable backend services for educational software using **Java (Spring Boot, Hibernate, JPA, JDBC)** and **Node.js**, integrating RESTful APIs to optimize data flow for real-time communication, ensuring high performance and availability.
- Built **microservices with Node.js and Java**, ensuring efficient data processing and seamless integration for user interactions and content delivery, enhancing responsiveness by **20%**.
- Implemented real-time data pipelines using **Apache Kafka** to process student activity streams and **Apache Spark** for analytics, resulting in a **30%** improvement in curriculum optimization and a 25% boost in performance tracking.
- Developed **Python scripts** to automate ETL workflows, streamlining data extraction, transformation, and loading, reducing manual effort by **40%**.
- Leveraged **AWS services** such as **CloudWatch** for real-time monitoring, **RDS** for database management, **Glue** for ETL processes, and **Redshift** for analytics, ensuring a scalable and efficient backend.
- Integrated **JPA and JDBC** with **PostgreSQL and MySQL databases** to store and retrieve student data, course details, and performance metrics, optimizing query performance by 35%.

- Designed and implemented dynamic, responsive UIs using **JavaScript**, **TypeScript**, **React.js**, **Redux**, **Bootstrap**, and **Next.js**, improving user engagement and ensuring cross-platform compatibility.
- Implemented **CI/CD pipelines** using **GitHub Actions** and **Jenkins**, automating testing, builds, and deployments, reducing errors by 80% and achieving 30% faster release cycles.
- **Automated testing** using **Cypress**, **Jasmine**, and **JUnit**, achieving 98% test coverage and reducing frontend bugs in critical workflows by **25%**.
- Containerized applications using **Docker** and orchestrated deployments with **Kubernetes**, ensuring seamless scalability and high availability for the educational platform.
- Collaborated in **Agile Scrum environments**, using **Git** for version control to streamline development and ensure the timely delivery of key features.

Trinity Technolabs, India
Software Engineer   **Feb 2020 - Mar 2021**
- Developed and maintained backend services using **Node.js and Express.js**, improving system reliability by 25% and enabling seamless integration with frontend applications.
- Created responsive and interactive user interfaces using **JavaScript, TypeScript, AngularJS, Tailwind CSS, and HTML/CSS**, enhancing the overall user experience and ensuring seamless cross-platform compatibility.
- Deployed applications **on Azure Cloud**, leveraging services like App Service, Blob Storage, SQL Database, and Load Balancer, improving scalability by 40% and performance by 30%.
- Developed **CI/CD pipelines with Jenkins** for automating Node.js and Python-based build, test, and deployment processes, reducing deployment errors and improving release cycles.
- Implemented **TDD with Mocha, Chai, and Pytest for backend testing**, improving code quality and reducing bugs by 20%. Utilized Sass for efficient, responsive UI styling.
- Developed and executed **PostgreSQL procedures** for structured data management and used **MongoDB** for scalable **NoSQL data storage**, improving data retrieval performance by 30%.
- Used **Git for version control** to maintain code integrity and facilitate collaborative development. Created architecture diagrams to improve system documentation, enhancing understanding and communication by 40%.
- Leveraged **Pandas and NumPy libraries** to streamline data processing and analysis within ETL pipelines, improving data processing speed by 25% for large datasets.
- Developed **Python scripts to automate ETL workflows** and integrated Apache NiFi and AWS Glue for efficient data extraction, transformation, and loading, improving performance and data consistency by 30%.

Adani, India
Software Engineer Intern   **Jul 2019 - Jan 2020**
- Built responsive **UIs with HTML, CSS, JavaScript, and Bootstrap**, improving cross-browser compatibility and user experience by 30%.
- Created **GraphQL APIs with Node.js**, optimizing data retrieval and reducing over-fetching for better performance.
- Developed **RESTful APIs using Node.js and Python**, enhancing backend functionality and performance.
- Built **SPAs with React JS and jQuery**, improving load times and reducing server requests by 20%.
- Deployed applications **on AWS EC2 and S3**, increasing scalability and reliability by 35%.
- Performed unit testing **with Jest for Node.js and Pytest for Python**, ensuring code quality and cross-device compatibility.

TECHNICAL SKILLS

Methodologies: SDLC, Agile, Waterfall
Programming Language: Java, C, C++, C#,Python,.NET, SQL
Frameworks: FastAPI, Django, TensorFlow, OpenCV, Spring MVC, Spring, Hibernate, Spring Boot, Spring Security, Spring Data JPA,
Web Technologies: HTML, CSS, JavaScript, RESTful APIs, TypeScript, jQuery, Ajax, XML, JSON, Bootstrap, React.js, React Router, Vue.js, Node.js, Express, GraphQL, Next.js, Angular
Libraries & Others: jQuery, Figma, Bootstrap, Problem Solving, Object-Oriented Programming, Junit, Accessibility, Adobe, Pandas, NumPy
IDE's: Eclipse, Visual Code, Notepad++, NetBeans, Dream Viewer
Database: MongoDB, MySQL, SQL Server, Firebase, PostgreSQL
Cloud Platform: Amazon Web Services, (EC2, EMR, S3, Redshift, Lambda, CloudWatch), Google Cloud Platform (GCP), Microsoft Azure (Azure Data Factory, Azure Databricks, Synapse Analytics, HDInsight, Blob Storage)
Software Tools & Other Tools: JUnit, Selenium, Mockito, Maven, Docker, Gradle, Jenkins, Jira, Git, GitHub, CI/CD pipelines, Apache Airflow, AWS Glue, Apache Kafka, Apache NiFi, Cypress, Jasmine, Mocha, Pytest.
Operating System: Windows, Linux, iOS

PROJECTS

- **Comparative Study and Analysis of Eye Gaze Estimation Models, ASU**
  Conducted comparative analysis of iTracker, FAZE, and ODABE models for eye gaze estimation, emphasizing accuracy, MSE, andtraining efficiency. Applied TensorFlow architectures, evaluated outcomes, and provided insights for model optimization.
- **Analysis to Forecast Store Sales, ASU**
  Developed a sales forecasting system with Python, using RandomForest, KNN, and SVM for trend predictions, and leveraged Pandas, Scikit-learn, and Matplotlib for data analysis and visualization.
- **Automated Security Robot Dog Detection, ICICSE - 2020**
  Published in the 8th International Conference on Innovations in Computer Science and Engineering

Certifications

- **Programming in Python by UDEMY**
- **C# for .Net Developer**
- **UI/UX Engineer – Adobe**