PAVAN RAJKUMAR MAGESH

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EDUCATION

University of Southern California, Viterbi School of Engineering **Jan 2022 - Dec 2023**
Master of Science in Computer Science – GPA 3.75/4.00
Relevant Coursework – Operating Systems, Security Systems, Web Technologies, Databases, Information Retrieval, Algorithms

Visvesvaraya Technological University, Bangalore **Aug 2017 - Jul 2021**
Bachelor of Engineering in Computer Science – GPA 8.73/10.0
Relevant Coursework – Computer Networks, Cloud Computing, Unix Programming, Storage Networks, Computer Organization

SKILLS

Infrastructure & Cloud – Linux, Docker, Kubernetes, Ansible, Terraform, Prometheus, Grafana, AWS Certified, Azure
Programming Languages – Python, Java, Go, Shell, C, PHP, JavaScript, HTML/CSS, SQL
Libraries & Frameworks – Angular, Flask, .NET, Node.js, MongoDB, MySQL, PostgreSQL, Selenium
Tools & Development – Git, DevOps, CI/CD, Agile SDLC, Computer Networking, Server Architecture

EXPERIENCE

Systems Administrator | Signal & Image Processing Institute, USC **Jan 2022 - Present**
- Saved **$6000** in annual hosting costs by migrating SMTP mailing solution from 3rd party provider to on-premises server.
- Delivered a comprehensive **3-2-1 backup strategy,** thereby enhancing security of critical organizational data.
- Reduced server bandwidth utilization by **80%** by rewriting scripts to use incremental & differential backup policies.
- Enhanced system monitoring, alerting, and config management capabilities using **Prometheus**, **Grafana**, and **Ansible**.

Systems Administrator | USC Information Sciences Institute **June 2022 – Aug 2022**
- Integrated **48** high-density server nodes into test-bed infrastructure and documented all server & network resources.
- Saved an estimated **30** workhours by **automating** bootstrap operations for newly installed server nodes using Ansible.
- Managed & monitored **5** multimillion-dollar server test-bed facilities using modern **DevOps** tools and best practices.

Associate Product Developer | Epicor Software Corporation **Jan 2021 - Dec 2021**
- Took **complete ownership** of a client notifications tool and worked with stakeholders to deliver features & fix bugs.
- Improved backend querying performance by **31%** by restructuring JSON document data formats in Azure Cosmos DB.
- Minimized page-load latency by **0.3s - 0.5s** by adding caching and preventing repeated triggering of database API calls.
- Resolved **8 months**' worth of technical debt by bringing Dev, Test, and Production deployment environments in sync.

Software Engineering Intern | Eurofins Scientific **Feb 2020 - Dec 2020**
- Developed a tool that estimates the bug-inducing risk of a git commit using **ML** while achieving an accuracy of **72%**.
- Justified predictions by utilizing **explainable AI** to identify the most impactful features of a commit on the outcome.

PROJECTS & PUBLICATIONS

Weenix OS Kernel Programming
- Implemented key **kernel** data structures, subsystems, and functionalities like virtual file systems, virtual memory, processes, threads, and schedulers in **C** for the Weenix OS, a Unix-like operating system.

University Results Scrapper & Management System
- Re-engineered a web-scrapping tool using pure **Bash**, improving speed by **1.5x** over older Python-based iteration.
- Built a web-based management system to handle scrapped data and deployed it in production at undergrad university.

An Explainable Machine Learning Model for Early Detection of Parkinson's Disease using LIME on DaTSCAN Imagery – *Computers in Biology and Medicine (Vol. 126), Elsevier*
- Led a team of three and **first authored** a research paper which involved using ML and explainable AI methods for disease diagnosis, achieving accuracy of **95.2%** and garnering **90**+ citations. Developed a hosted web-app for the same.

LEADERSHIP & INVOLVEMENT

- **Core** team member of Google Student Developers Club. Collaborated with a student team of 8 and the official Google Developer Relations body to organize technical events and workshops attended by **500**+ students.
- **Founder** of Research Club at undergraduate university. Conducted workshops on research and technical paper writing.
- Featured on Epicor's LinkedIn feed on National Intern Day for being a **top-performing** product development intern.