Dipak Sairamesh

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Experienced engineer with a focus on crafting intelligent systems using automation and data-driven technologies. A collaborative problem-solver with an aptitude for R&D and technical troubleshooting. Seeking to leverage expertise in system design, integration, agile development, data analysis and optimization to deliver efficient and reliable solutions.

EDUCATION

Master of Science, Artificial Intelligence and Robotics | Northeastern University **Dec '23 | Boston, MA**

- **Leadership Development**: LEAD360, Graduate Leadership Institute (Level 2 Badge)
- **Graduate Assistant**: Computer/Human Interaction, Khoury College of Computer Sciences

Bachelor of Technology, Mechanical Engineering | PES University **May '18 | India**

- **Honors**: First Class with Distinction Recipient

PROFESSIONAL EXPERIENCE

Makerspace Specialist | Northeastern University **Jan '23 - June '23 | Boston, MA**

- Implemented Trello automation to streamline 3D printing, CNC routing, and rapid prototyping using data-oriented assessments to identify bottlenecks, optimize studio machinery allocation, and expedite production by 60%.
- Managed financial budgets, inventory lists, and procurement records using Excel, showcasing proficiency in economic decision making and strategic planning aimed at strengthening student programs and initiatives.
- Delivered comprehensive technical training to 250+ students in software aptitude and hardware proficiency, offering feedback to enhance product design for ease of manufacturing, cost optimization, and time efficiency.

Competencies: Project Management, Market Research, Root Cause Analytics, A/B Testing, CAD / CAM, Arduino

Customer Success Engineer, Software Development | Aruba Networks **Feb '19 - July '21 | India**

- Automated scripts using Python, Postman, REST APIs, and JSON, resulting in a 90% faster post-migration validation, and optimized KPI supervision and standardization across tools to enhance operational efficiency.
- Co-engineered Aruba User Experience Insight (UXI), an AIOps-powered monitoring dashboard solution, using data from UXI / Cape sensors and dynamic packet capture to boost end-user experience and visibility by 75%.
- Utilized statistical modeling techniques in Tableau and PowerBI to analyze performance patterns, trends, and anomalies, resulting in an 80% expansion into network security insights for prevention of bugs / threats.
- Created Grafana and Kibana surveillance dashboards for data visualization of system CPU, memory, disk, and I/O utilization for InfluxDB, Prometheus, and AWS Elasticsearch databases, accelerating troubleshooting by 2x.
- Mentored a team of 10 across 3 sites (India, USA, Australia) in predictive forecasting for spectrum analyses, report generation, and BOM organization that saved 20+ hours weekly and improved resource utilization by 50%.

Competencies: Version Control (Git/GitHub), Containerization (Docker, Kubernetes), CI/CD (Jenkins), Virtualization (VMWare), Agile (Jira, Confluence), Cloud (AWS, Azure, GCP), Java, R, SQL / NoSQL, Data Mining, Data Science

RESEARCH PROJECTS

Crater Observing Bio-Inspired Rolling Articulator | Cobra

- Enhanced perception module for object detection and semantic scene segmentation with 78% real-time mIoU by implementing deep learning architectures, fine-tuning hyper-parameters, and applying quantization techniques.

Competencies: Computer Vision, PyTorch, Keras, TensorFlow, OpenCV, scikit-learn, CNN, Label Studio, TensorRT

Generative Artificial Intelligence | Website

- Leveraged Large Language Models (LLMs) for prompt engineering and generative AI in diffusion processes, incorporating text classification, tokenization, sentiment analysis, and model selection for digital content creation.

Competencies: NLP, Supervised Learning, GPT, Copilot, Hugging Face, Adobe Creative, HTML, CSS, JavaScript

Autonomous Mobile Robot | TurtleBot

- Developed 95% target detection rate algorithms for '36h11' AprilTags by generating occupancy grid maps through frontier-based exploration using lidar, camera, and Raspberry Pi for Simultaneous Localization and Mapping.

Competencies: C++, Linux, ROS, Numpy, Scipy, Gmapping, Cartographer, Gazebo, Rviz, Sensor Fusion, Statistics

Machine Learning | Sudoku

- Increased solver efficiency by 65% using reinforcement learning and advanced techniques involving human feedback mechanisms, memory buffers, Deep Q-Learning, Monte Carlo methods, and OpenAI Gym API.

Competencies: MATLAB, Unsupervised Learning, Google Colab, Jupyter Notebook, matplotlib, pandas, LaTeX