# Sai Deepthi Jammula

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## EDUCATION

**Purdue University Northwest** — **Hammond, IN**
Master of Science - Computer Science — Jan 2023 – Dec 2024
Focused Studies: Algorithms, Operation systems, Programming languages and interpreters, Artificial Intelligence, Deep Learning, Software Design.

**Malla Reddy College of Engineering and Technology** — **Hyderabad, India**
Bachelors in Electronics and Communication Engineering — Jun 2017 – Jun 2021
Coursework: Python, Data Structures, Database Systems, C, C++, Java

## EXPERIENCE

**Systems Engineer** — **Hyderabad, India**
Tata Consultancy Services | Client: Ericsson — Jun 2021 – Dec 2022

- Spearheaded the development and enhancement of ToscaO microservice using Python and Java, integrating them into the Kubernetes and Docker environments to ensure high availability, scalability, and low latency performance of applications.
- Designed and implemented automated solutions to streamline deployment processes using Jenkins and Maven, reducing deployment times by 20% and improving operational stability by 15%.
- Collaborated with software development teams to design and optimize PostgreSQL database operations, creating robust indexing and query systems for high-efficiency data retrieval and scalability. Achieved a 25% performance improvement through custom queries, indexing, and tuning.
- Worked extensively in Linux-based environments to deploy, monitor, and update applications, ensuring seamless installation and operation of microservices.

**Lab Assistant** — **Hammond, IN**
Purdue University Northwest — Aug 2023 – May 2024

- Assisted over 50 students with hands-on lab exercises related to software design, focusing on key concepts like object-oriented programming, software architecture, and design patterns, improving their project success rate by 30%.
- Supported the development of a web application project, providing guidance on design, coding, and debugging using HTML, CSS, JavaScript, and C# for backend functionality, resulting in 100% project completion with positive feedback from students.
- Integrated QuickBooks with the web application using C#, enabling seamless financial data management, and reducing accounting-related bugs by 25% within student projects.
- Evaluated student projects and provided detailed feedback on code quality, functionality, and adherence to software design principles, helping improve student project grades by 10% on average.

## PROJECTS

**Road Crack detection:**

- Created a predictive anomaly detection model with VGG16, RPN, and ROI pooling, achieving 90% accuracy in identifying road cracks.
- Implemented predictive models to detect anomalies, leveraging PyTorch and GPU acceleration to enhance model scalability and computational efficiency. Processed and labelled over 1,000 road images to build a comprehensive dataset, reducing training time by 50% with GPU optimization.

**Efficient Path Finding and Visualization:**

- Applied Prim's MST and Dijkstra's shortest path algorithms for efficient US city map navigation, optimizing route calculations and reducing processing time by 25%.
- Developed a comprehensive GUI for visualizing algorithm outputs, which improved data accessibility and clarity, resulting in a 30% boost in the team's ability to generate actionable insights.
- Completed integration and testing phases, ensuring 100% accuracy in algorithm outputs and map visualizations.

**Neo4j CRUD Rest API:**

- Developed 4 CRUD APIs using Node.js and Express.js to manage student data in a Neo4j graph database.
- Created and tested 8 automated Postman tests, achieving a 100% pass rate.
- Visualized data relationships in Neo4j's graph database with 100+ student nodes.

## TECHNICAL SKILLS

- **Languages:** Python, C++, C, Java, Golang, MATLAB, SQL, C#.
- **Web Technologies:** HTML, CSS, React, Node.js, JavaScript.
- **Operating Systems:** Linux, Windows.
- **Database:** MySQL, PostgreSQL, Neo4j, Oracle.
- **Tools & frameworks:** Jira, Git, Postman, Rest API, Jenkins, Django, Pytest, Maven, Docker, Kubernetes, Agile, Azure ML.
- **Software & IDEs:** VS code, Eclipse IDE, Bitbucket, Google Colab, TensorFlow, PyTorch.

## ACHIEVEMENTS & CERTIFICATIONS

- **Getting Started with DevOps on AWS**, Amazon Web Services – September 2024
  Learned the fundamentals of DevOps practices and tools on AWS, including CI/CD, monitoring, and infrastructure.
- On the Spot Award – Mar 2021: Awarded for improving system efficiency by 20% and resolving critical issues.
- Star of the Month – Jun 2022: Recognized for driving a 30% increase in project delivery speed and contributing to a 95% client satisfaction rate.