RITIKA LAMA

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Education

Truman State University   May 2026
B.Sc. in Computer Science   GPA: 3.89/4.0
Relevant Coursework: Object Oriented Programming, Calculus, Systems Programming, Data Structures and Algorithms, Models of Computation, Statistics and Applied Statistics, Database Management Systems, Computer Networks, Artificial Intelligence

Skills

Programming Languages: C, C++, Python, HTML, CSS, Java, Bash, Assembly Language, R, SQL
Developer Tools: Visual Studio Code, GitHub, Code Blocks, Eclipse, LaTeX, MySQL, Android Studio

Personal and Research Projects

Personal Portfolio
-Developed 2 responsive portfolio websites- one 3D using Node.js, three.js, JavaScript, and another one using HTML, CSS, and JS showcasing skills, projects, activities, education, and experiences.
-Integrated more than 5 multimedia elements including 3D models, animation, and interactive menus.
-Implemented responsive design principles to ensure compatibility across 4+ devices, screen sizes, and 3 browsers.

Typing test website
-Designed an interactive typing test web application using Node.js and React.js to help users improve their typing speed and accuracy through 3 test levels (easy, medium, and hard).
-Designed real-time calculations for speed(wpm), accuracy, and error count.
-Implementing a leaderboard and data persistence across 10+ user sessions to maintain user score consistency.

Blood Organs Management Bank
-Build an interactive website using React.js, Node.js, MongoDB and PostgreSQL to manage blood and organ donations, serving 100+ registered donations.
-Developed 4 main features for donor registration, testimonials section, map, and blood inventory management.
-Provided an interactive map displaying 100+ certified locations with available blood and organs and notified recipients when a new donor is added in locations near them.

Lung and Colon Cancer Detection using deep AI model
-Built the 23-layer and a 44-layer architecture using deep neural networks called Residual 1D convolutional networks with Squeeze and Excitation blocks.
-Collected 25000 CT scan images from LC25000, preprocessed using mean and standard normalization, and trained using Stochastic Gradient Descent (SGD) optimizer from epochs 11 to 120.
-Implemented the model using PyTorch achieving 100% accuracy across 3 types of cases (lung, colon, and healthy).
-Authored a 24-page long research paper using LaTeX and published it in the Journal of Cancer.

Squeeze and Hypercomplex Networks on Leaf Disease Detection
-Proposed a deep learning architecture using Squeeze and Hypercomplex networks using RESNET, Quaternion, Squeeze-and-Excitation, and parameterized hypercomplex network to classify leaf diseases in 3 crop types (rice, wheat, and corn), and implemented it using PyTorch.
-Preprocessed over 17000 leaf image datasets to enhance model performance and accuracy, reducing false positives by 5%.
-Achieved 100% detection accuracy and documented findings in a 16-page report comprehensive report using LaTeX.

Experience

Researcher, Truman State University
-Worked under supervision of CS professor to design, implement, and analyze the 2 architectures, contributing to the advancement of the detection of lung cancer, colon cancer and leaf diseases using deep learning, machine learning, and neural networks.
-Performed the data collection of 30000 medical images, analysis, and interpretation.
-Contributed to the preparation of 2 research papers, 2 reports, 3 presentations, and 1 publication.
-Participated in research meetings and presented research findings to contribute to the overall research strategy.

Teacher's Assistant, Truman State University
-Assisted 20+ students with lectures, course materials, and assignments for Python.
-Assisted students with debugging the code and understanding error messages.
-Evaluated, graded, and provided feedback on 50+ coding assignments, and projects.

Study Abroad Office, Truman State University
Office assistant and Front desk
-Managed the front desk operations by promptly responding to inquiries via phone, email, and in-person, providing comprehensive information about the study abroad programs.
-Assisted in organizing and maintaining databases with 100+ records, and documentation related to study abroad programs, ensuring accuracy and accessibility of information for students and staff.
-Collaborated with 3 team members to streamline office procedures and improve the overall efficiency of administrative tasks.

Computer Science, Mathematics, and Statistics Department, TSU
Office Assistant
-Assisted 100+ students per semester in the department with various administrative tasks.
-Provided support in maintaining and organizing academic materials, helping in smoother learning, and inquiring environment for students and faculty.