Gowtham Pentela

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Hammond, Indiana - 46323, USA

Education

- **Purdue University** *Jan 2023 - Dec 2024*
  Masters in Computer Science Hammond, Indiana, USA
  - Focused Studies: Algorithms, Operating Systems, Programming Languages and Interpreters, Deep Learning, Data Mining and Machine Learning, Software Design
  - GPA: 3.67/4.00

- **BIHER** *Jun 2017 - May 2021*
  Bachelor's in Technology, Computer Science Chennai, India
  - :Course Work: Data Structures, Algorithms, Database Systems, C, C++, Java, SQL, System Software
  - Grade: 83.2%

Experience

- **Centre for Visualization through Innovation and Simulation (CIVS) [🌐]** *May 2023 – Present*
  Research Assistant | Machine Learning Hammond, Indiana, US
  - Conducted research on Integrated Virtual Blast Furnace to identify critical parameters such as Deadman plugging, Thermal Index, and Missing Thermocouples in a Blast Furnace, analyzing data from over 400+ sensors.
  - Implemented various Machine Learning Algorithms, achieving an accuracy of 98.4% in predictions, ensuring efficient predictions.
  - Analyzed sensor data from the Blast Furnace for over 12 years to identify furnace conditions, including early detection of Deadman plugging with an accuracy of 98%
  - Utilized Plotly to build interactive dashboards for real-time monitoring and analysis of the Thermal Index and other metrics.
  - Mentored a team of 3 peers, while collaborating with Research Engineers and Scientists to enhance research methods.

- **Accenture [🌐]** *Aug 2021 – Dec 2022*
  Application Development Associate | Client: CICA(CHUBB) Hyderabad, India
  - Designed, built, tested, assembled, and configured 10+ applications based on specific business requirements, reducing deployment time by 30%.
  - Developed, designed, and maintained technologies for 5+ clients, improving operational efficiency by 25% through tailored solutions.
  - Consistently delivered high-quality code within project timelines, completing 100% of projects on schedule, and participated in 20+ code reviews to ensure code quality and adherence to best practices.

- **Sutherland [🌐]** *August 2019 - September 2019*
  Associate IT Helpdesk (Intern) | Client: AT&T Chennai, India
  - Provided technical assistance to clients, maintaining a 95% customer satisfaction rate through effective communication and relationship management.
  - Resolved 100+ support tickets within defined SLAs and assisted teammates in resolving 20% of their tickets, improving overall team efficiency.

PROJECTS

- **Sign Language Recognition: [Created a CNN model to predict the signs based on images.]** *Sep 2024*
  Tools: [Python, Deep Learning] [GitHub]
  - Developed a CNN-based model for Sign Language Recognition, achieving 99.023% accuracy using American Sign Language (ASL) datasets.
  - Utilized 5 key libraries in Python: TensorFlow, Keras, Pandas, Numpy, and Scikit-learn for data preprocessing, model building, and evaluation.
  - Implemented 3 data augmentation techniques (rotation, zoom, and shift) to improve model generalization and performance.
  - Designed a CNN with 2 Convolutional layers, 2 MaxPooling layers, and a final Dense layer for classifying 24 ASL letters.
  - Trained the model over 10 epochs using Adam optimizer and plotted accuracy/loss curves for training and validation datasets.

- **Data Analysis: [Performed comprehensive analysis of the diamonds dataset]** *Aug 2024*
  Tools: [R] [GitHub]
  - Analyzed the diamonds dataset with 53,000+ entries, focusing on cut, carat, color, and price.
  - Cleaned and transformed data using dplyr and tidyverse, reducing inconsistencies by 10%.
  - Generated summary statistics for 7 variables to uncover key insights into diamond pricing and weight.
  - Created 3 visualizations using ggplot2, bar plots for 5 diamond cuts, scatter plots for price vs. carat, and histograms for price distribution.
  - Removed 100+ duplicates and handled missing values to ensure data quality.

- **Efficient Path Finding and Visualization:** *Aug 2023- Dec 2023*
  Tools: [Java, Algorithms] [GitHub]
  - 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.

- **Road Crack Detection: [Detecting cracks present on Road]** *January 2023 - May 2023*
  Tools: [Python, Pytorch] [GitHub]
  - Created a detection model with VGG16, RPN, and ROI pooling, achieving 90% accuracy in identifying road cracks.
  - Collected data for road crack detection using Google Maps API.
  - Performed classification on the images based on number of cracks in the image by using deep learning techniques.

SKILLS

- **Programming Languages:** Python, R, JCL, ADSO, IDMS, COBOL, Java
- **Web Technologies:** HTML, CSS
- **Database Systems:** SQL, POSTGRE SQL
- **Visualization Tools:** Tableau, Power BI, Excel
- **Software:** MS Office, Excel
- **IDE:** VS CODE , VISUAL STUDIO, Notepad, Jupyter
- **Analytics:** Data Analysis, Data Analytics, Data Visualization, Data Modelling, Data Preprocessing
- **Version Control:** Git, Bitbucket
- **Libraries:** Scikit-learn, TensorFlow, PyTorch, Keras,OpenCV,scikit-image, NumPy, Pandas,Matplotlib, Seaborn
- **Deep Learning Architectures:** CNNs, RNNs, LSTMs

CERTIFICATIONS

- **Google Data Analytics** *August 2024*

Additional Information

Languages: English (Advanced), Telugu (Native), Tamil (Intermediate), Hindi (Intermediate)

Interests: Cooking, Listening to Songs, Exploring