# Gowtham Pentela

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Gowtham Pentela | Gowtham-Pentela | Gowtham Pentela
Hammond, Indiana - 46323, USA

## Education

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

- **Bharath Institute of Higher Education and Research** *May 2021*
  *Chennai, India* Bachelor's in Technology, Computer Science and Engineering
  - :Course Work: Data Structures, Algorithms, Database Systems, C, C++, Java, SQL, System Software
  - Grade: 83.2%

## Relevant 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, analyzing data from 400+ sensors to identify critical parameters like Deadman plugging, Thermal Index, and Missing Thermocouples.
  - Achieved 98.4% prediction accuracy by applying various machine learning algorithms, ensuring efficient furnace condition predictions.
  - Analyzed 12 years of sensor data, enabling early detection of Deadman plugging with 98% accuracy.
  - Built interactive dashboards using Plotly for real-time monitoring and mentored a team of 3, collaborating with engineers and scientists to improve 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.

## Personal Projects

- **ASL Sign Language Detection: [Detected ASL signs with ML and CV]** *Sep 2024 - Oct 2024*
  *Tools: [Python, Machine Learning, Computer Vision]* [🐙]
  - Processed 5GB of ASL image data covering 26 letters and 2 special signs, achieving 99.76% accuracy with a CNN model.
  - Applied 3 data augmentation techniques: rotation, zoom, and shift, to enhance model generalization
  - Created a real-time ASL detection program using MediaPipe for hand tracking and landmark detection.
  - Designed a systematic labeling process for 28 distinct ASL signs, ensuring accurate classification during inference.

- **Data Analysis: [Performed comprehensive analysis of the diamonds dataset]** *Aug 2024*
  *Tools: [R]* [🐙]
  - 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.

## Course Projects

- **Efficient Path Finding and Visualization:** *Fall 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]** *Spring 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
- **Computer Science Concepts:** OOPS, Data Structures, Algorithms, Database Management, Operating Systems,Artificial Intelligence and Machine Learning.
- **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 Modeling, Data Preprocessing
- **Data Warehousing Platform:** Snowflake
- **Version Control:** Git, Bitbucket
- **Cloud:** Microsoft Azure
- **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*

## Other Experience

- **Sutherland** [globe] *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.