

# Gowtham Pentela

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 [Gowtham Pentela](#) |  [Gowtham-Pentela](#) |  [Gowtham Pentela](#)

Hammond, Indiana - 46323, USA

## EDUCATION

### • Purdue University

*Masters in Computer Science*

*Jan 2023 - Dec 2024*

*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

*Bachelor's in Technology, Computer Science*

*Jun 2017 - May 2021*

*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)

*Research Assistant | Machine Learning*

*May 2023 – Present*

*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

*Application Development Associate | Client: CICA(CHUBB)*

*Aug 2021 – Dec 2022*

*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

*Associate IT Helpdesk (Intern) | Client: AT&T*





*August 2019 - September 2019*

*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

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- **Sign Language Recognition: [Created a CNN model to predict the signs based on images.]** Sep 2024  
Tools: [Python, Deep Learning] 
  - 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] 
  - 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] 
  - 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] 
  - 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

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- **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

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- **Google Data Analytics**

August 2024

**ADDITIONAL INFORMATION**

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

**Interests:** Cooking, Listening to Songs, Exploring