

# Hardik Chhipa



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Bhilwara, Rajasthan - 311001, India

## OVERVIEW

Passionate machine learning enthusiast with a strong interest in Machine Learning, Computer Vision, and Data Analysis. Committed to driving impactful real-world solutions through a blend of creativity and developing technical expertise in AI technologies as a student.



## EXPERIENCE

- **Deep Learning Research Intern @IIT Jodhpur**  June 2024 – August 2024  
*Deep Learning Engineer*  
Jodhpur, India
  - Developed a self-supervised learning classifier using the MIMIC dataset.
  - Utilized BYOL for image analysis, BERT, and Bio-BERT for text extraction.
  - Implemented VICReg for loss calculation to enhance model performance.
- **Research on Lightweight CNN for Diabetic Retinopathy Detection**  May 2023 - July 2024  
*Machine Learning Engineer*  
Chennai, India
  - Explored various CNN architectures (DenseNet, MobileNet, ResNet, Xception, Inception) for diabetic retinopathy detection.
  - Employed knowledge distillation to create a lighter student model mentored by DenseNet and others.
  - Achieved 68.77% validation accuracy on a diverse Kaggle dataset, focusing on practical deployment in medical devices.
  - Presented the paper on the above work at ICOECA 2024.

## EDUCATION

- **SRM Institute of Science and Technology** September 2021 - June 2025  
*BTech, Computer Science Engineering*  
Chennai, India
  - CGPA: 8.8/10.00
- **Central Academy** June, 2021  
*Higher Secondary Education*  
Bhilwara, India
  - Grade: 81.0%
- **Central Academy** May, 2019  
*Secondary Education*  
Bhilwara, India
  - GPA: 78.8%

## PROJECTS

- **Project A: [BERT-Driven Insights: Advanced Sentiment Analysis on Social Media]** June 2024 - August 2024  
*Tools: [Python, Transformers (Hugging Face), PyTorch, Pandas, Scikit-learn, NLTK, Matplotlib, Plotly, Git.]* 
  - Developed a BERT-based sentiment analysis system for accurately detecting sentiments in social media posts, significantly enhancing the handling of slang, sarcasm, and complex linguistic patterns.
  - Implemented BERT's deep contextual embeddings for sentiment classification, achieving an accuracy rate of over 92%, outperforming traditional models like VADER.
  - Applied advanced NLP techniques to analyze subtle attitudes in social media content, facilitating informed decision-making and strategic planning across various domains.
- **Project B: [Campus Aide]** March 2024  
*Tools: [HTML, CSS, JavaScript, Firebase, Ionic, TypeScript, Geolocation API]* 
  - Developed an inclusive safety and accessibility application, achieving real-time emergency reporting and vehicle monitoring.
  - Implemented real-time safety alerts, processing large volumes of data from campus sensors and user reports.
  - Created interactive visualizations for tracking vehicle movements and optimizing shuttle operations, enhancing transportation efficiency.
  - Developed a community engagement module for easy integration with existing campus systems, encouraging user feedback on accessibility and safety.
- **Project C: [Machine Learning Data Analysis for HeatSink Design]** October 2023  
*Tools: [Ansys Icepak]*
  - Fine-tuned heatsink designs through GANs in collaboration with Intel Lab at SRM IST.
  - Research innovations in thermal management for data centers and edge computing systems.
  - Utilizing machine learning to optimize cooling efficiency and energy efficiency.

[C.1] B. Baranidharan, J. J and Hardik Chhipa, "[Light Weight CNN Based on Knowledge Distillation for Diabetic Retinopathy Detection](#)," **2024 International Conference on Expert Clouds and Applications (ICOECA)**, Bengaluru, India, 2024, pp. 860-864, doi: 10.1109/ICOECA62351.2024.00151. keywords: Knowledge engineering;Diabetic retinopathy;Analytical models;Accuracy;Medical devices;Manuals;Blindness;Diabetic Retinopathy;Convolutional Neural Networks;Knowledge Distillation;Teacher Student model,

[A.1] Hardik Chhipa, Janenie J, Manas Singhal, and B.K. Gnanavel. "[Next-Generation Electronics Packaging Technologies for High-Performance Applications](#)." Paper presented at the **ASME 2024 International Technical Conference and Exhibition on Packaging and Integration of Electronic and Photonic Microsystems (InterPACK 2024)**, *San Jose, California*, October 8-10, 2024.

SKILLS

- **Programming Languages:** Python, C, C++, Java, JavaScript
- **Web Technologies:** HTML, CSS, JavaScript, Firebase, Git, Github
- **Database Systems:** MySql, Oracel
- **Data Science & Machine Learning:** Tensorflow, Pytorch, Numpy, Pandas, Scikit learn, Keras, Matplotlib, Plotly, Seaborn, OpenCV, nltk, Transformers Hugging Face
- **Specialized Area:** Machine Learning, Deep Learning, Natural language processing, Computer Vision
- **Other Tools & Technologies:** Electronic Thermal Management: Ansys Icepak, Microsoft Power BI, Mermaid, Docker, Linux
- **Research Skills:** Research Design, Methodology, Scientific Writing, Communication and Architecture design

HONORS AND AWARDS

<i>3rd place</i> - March 2024 Philips Ideathone <a href="#">Summer Internship Offer</a>	<i>2nd place</i> - May 2022 Ultron 5.0, SRM Institute of Science and Technology, Chennai
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LEADERSHIP EXPERIENCE

• <b>Vice President – Technical Writing</b> SRM IET On Campus, Chennai	<i>January 2023 - March 2023</i>
• <b>Technical Head</b> SRM IET On Campus, Chennai	<i>March 2023 - July 2024</i>

CERTIFICATIONS

• <a href="#">Machine Learning for Engineering and Science Applications - NPTEL</a>	<i>April 2024</i>
• <a href="#">AWS Academy graduate - AWS Cloud foundations (AICTE)</a>	<i>February 2024</i>
• <a href="#">Network Addressing and Basic Troubleshooting</a>	<i>November 2023</i>
• <a href="#">Introduction to Machine learning - NPTEL</a>	<i>September 2023</i>
• <a href="#">Python for Data Science IIT Kharagpur - NPTEL</a>	<i>August 2023</i>
• <a href="#">Introduction to Packet tracer - CISCO</a>	<i>April 2023</i>
• <a href="#">AWS Academy graduate - AWS Machine Learning foundations</a>	<i>March 2023</i>

ADDITIONAL INFORMATION

Languages:

- I. English (Full Professional Proficiency)
- II. Hindi (Native Proficiency)
- III. French (Elementary Proficiency)

Interests: [Reading](#), Gaming, Video Editing.