

Hardik Chhipa

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Bhilwara, Rajasthan - 311001, India

OVERVIEW

In my work, I merge AI with sustainability to create impactful solutions across various domains. My goal is to develop intelligent systems that not only address real-world challenges but also minimize environmental impact and foster inclusivity. By innovating in areas like healthcare, energy, and beyond, I strive to enhance accessibility and efficiency, driving progress while ensuring a positive footprint on the planet.

EXPERIENCE

- **Deep Learning Research Intern @IIT Jodhpur** [\[G\]](#) 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** [\[G\]](#) 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
 - Score: 81.0%
- **Central Academy** May, 2019
Secondary Education
Bhilwara, India
 - Score: 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.] [\[G\]](#)
 - 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.
- **Project B: [Campus Aide]** March 2024
Tools: [HTML, CSS, JavaScript, Firebase, Ionic, TypeScript, Geolocation API] [\[G\]](#)
 - 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 Ideathon Summer Internship Offer	<i>2nd place</i> - May 2022 Ultron 5.0, SRM Institute of Science and Technology, Chennai
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LEADERSHIP EXPERIENCE

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

CERTIFICATIONS

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