



# Hemlata Gautam

Bachelor of Technology  
in Computer Science Engineering  
Indian Institute Of Technology, Ropar

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Github | LinkedIn  
Codeforces

## EDUCATION

| Degree                 | Institute/Board                       | CGPA/Percentage | Year      |
|------------------------|---------------------------------------|-----------------|-----------|
| Bachelor of Technology | Indian Institute of Technology, Ropar | 6.45            | 2022-2026 |
| Senior Secondary       | Central Board of Secondary Education  | 92.8%           | 2021      |
| Secondary              | Central Board of Secondary Education  | 94.8%           | 2019      |

## EXPERIENCE

- **ML Internship - IEEE SPS VIP Cup Winner'24: Retinal OCT Image Classification** May 2024 - July 2024  
*Under the supervision of Dr. Puneet Goyal, IIT Ropar | Python, Tensorflow, OpenCV* **Github**
  - Secured **1st position globally** to qualify for the finals at the ICIP Conference in Abu Dhabi.
  - Paper produced - "Classification of Noisy Retinal OCT Images into Healthy, DME and Non-Diabetic Disorders"
  - **Tasks Performed:**
    - \* **Denoising:** Employed a Self-Supervised Self2Self Network and Conditional GAN (cGAN) to reduce noise up to 90%.
    - \* **Super Resolution:** Engineered 2Encoder-1Decoder ESRGAN model to enhance the quality of retinal OCT images.
    - \* **Classification:** Used variation of ROCT-Net involving pretrained Efficient-NetB0 and Xception for high accuracy.
  - **Models Implemented** - Self2Self Net, cGAN, CycleGAN, SRGAN, 2Encoder-1Decoder ESRGAN, ResNet50, EfficientNetB0 based CNN architectures

## PROJECTS

- **ADOBE : Image Classification and Artifact Detection** Dec 2024- Dec 2024  
*Machine Learning , XAI | VLM, Hugging Face, ESRGAN, Grad-CAM* **Github**
  - Achieved 98% accuracy on CIFAKE dataset of size 32x32 images under FGSM attacks with 150 ms CPU inference.
  - Localized regions of interest using Grad-CAM and employed a Vision-Language Models (VLM) to detect artifacts.
  - Secured 11th position among 28 Teams in IIT Bombay.
- **GSTN Hackathon** Sept 2024- Oct 2024  
*Machine Learning | Python, Scikit-Learn, Tensorflow* **Github**
  - Deployed Random Forest and XGBoost on a dataset of 900,000 records as part of GSTN Hackathon.
  - Analyzed the performance of Deep Neural Net, SVMs, and KNN methods on the dataset following EDA and Data Transforms.
  - Achieved 97.8% accuracy on GSTN's validation and test datasets through a strong data-driven strategy.
- **Self Balancing Robot** Oct 2023 - Dec 2023  
*Tinkering Lab | Arduino IDE, HC05 Bluetooth APK* **Github**
  - Constructed a Self Balancing Robot that balances on 2 wheels using gyroscopic sensors and an accelerometer.
  - Utilized PID (Proportional-Integral-Derivative) control for accurate movement, enabling the robot to be operated via Bluetooth from a smartphone, thereby improving user interaction and control precision.
- **Interactive Web Games Creation** Jul 2024 - Jul 2024  
*Personal Project | JavaScript, HTML5, CSS3, Postgres SQL, DBeaver* **Github**
  - Developed a collection of engaging web games, including Parking Zone, Flappy Bird, and Bouncing Ball
  - Integrated score tracking and leaderboard features to enhance competitive gameplay and user retention.
- **Minor Projects:** Sep 2023 - Apr 2024 **Github**
  - Efficient Spell Checker, RISC-V Assembler and CUCU Compiler.

## TECHNICAL SKILLS

- **Programming Languages:** C/C++, Python, JavaScript, HTML5, CSS, PL/pgSQL, Java, Flex and Bison, Risc-V Assembly
- **Libraries & Platforms:** Tensorflow - Keras, PostreSQL, DBeaver, PIL, Numpy, Matplotlib, Kaggle, Github, Overleaf , Linux

## ACHIEVEMENTS

- **IEEE VIP Cup Winner'24**, Secured **1st position** globally at the ICIP Conference in Abu Dhabi. 2024
- **Pupil at Codeforces**, Rating Achieved **1244** 2024
- **Silver Medal**, Relay Race, Aarohan in IIT Ropar 2023
- **8th Rank in Inter IIT**, Secure position in Top 10 among 60 students in Canvas Painting, IIT Kharagpur 2023

## POSITIONS OF RESPONSIBILITY

- **Coordinator**, Art Club, IIT Ropar May. 2023 - May. 2024
- **Co-Head** , Zeitgeist (Annual Fest), IIT Ropar Oct 2023- Nov 2023
- **Event Co-Head**, Art Club in Zeitgeist, IIT Ropar Oct 2023- Nov 2023

## KEY COURSES TAKEN

- **Machine Learning Specialisation:** Standford, Andrew Ng. - [Certificate](#)
- **CSE:** Data Structure & Algorithm, Discrete Maths, Programming Paradigms, Computer Architecture