Bhuvanyu Walia

bhuvanyu2002@gmail.com | (+91) 7678286641 | sector 75,Noida, UP
GitHub | Leetcode | LinkedIn

Education

Thapar Institute of Engineering and Technology, Patiala June 2026
B.E. Computer Engineering *Current GPA: 8.83 /10*
The Frank Anthony Public School, New Delhi June 2021
ICSE Board *Percentage: 91.2 /100*

Experience

DRDO Scientific Analysis Group (SAG), Metcalfe House, New Delhi (December 2024 - January 2025)
Research Internship - Training Completion Certificate

- Engineered adversarial attack techniques (FGSM, JSMA, DeepFool) to deceive CNN-based object detection and image classification models.
- Leveraged Keras-TensorFlow and OpenCV (YOLO) to simulate evasive scenarios; achieved 42% reduction in classification accuracy.
- Analyzed model vulnerability and generated insights for strengthening AI systems in defense-grade vision modules.

Major Projects

Sudarshan - World Organisations and Nations Informatic Web Application
Full Stack Web Application | Node, Express, MongoDB Atlas, EJS, Cloudinary

- Developed an MVC-based CRUD application to visualize and query global organizational and country datasets.
- Engineered advanced search filters using MongoDB operators ($regex, $in, $gte, $lte) for region, population, GDP, currency, etc.
- Enabled user-based authorization with Passport, implemented image uploads using Multer and Cloudinary.
- Deployed on Render with GitHub auto-deploy and secure .env configuration; handles dynamic session management.

WanderLust - Travel Listing Web Application
Full Stack Web Application | Express.js, MongoDB, Cloudinary, Passport.js

- Designed a user-authenticated platform for adding, editing, reviewing, and deleting travel listings with image support.
- Secured authentication using Passport (Local Strategy), with hashed password storage and flash-based access control.
- Employed Cloudinary and Multer to handle real-time image storage and retrieval; built robust error-handling middleware.

OcuMedAI - Deep Learning Based Cardiovascular Risk Assessment System using Retinal Images
Python, TensorFlow, Keras, OpenCV, XGBoost, Scikit-learn, Pandas, Cascaded Machine Learning

- Developed **CNN-based deep learning model (InceptionV3)** to classify **Diabetic Retinopathy** into 5 levels (No DR, Mild, Moderate, Severe, Proliferate) from retinal fundus images.
- Built an **EfficientNet-based regression model** to predict **Hypertension Risk** (0–100%) directly from fundus images with optimized MSE loss.
- Designed an **XGBoost regression model** to estimate **HbA1c levels** using demographic and clinical data (age, sex, BMI, smoking, hypertension status).
- Designed an integrated **OcuMedAI pipeline** combining image-based and tabular inputs to sequentially predict DR, HTN risk, HbA1c, and Atherosclerosis risk.

Skills

Languages - C, C++, Java, Python, R, MATLAB, SQL,
Development and Deployment Tools - Data Structures and Algorithms, MongoDB, MySQL, HTML, CSS, JavaScript, Bootstrap, TailWind CSS, React, EJS, Node, Express, RESTful API development, MVC architecture, Passport, Git, GitHub, , Cloudinary, Software Testing and Automation using Selenium and TestNG framework
Machine Learning, Deep Learning - Keras Tensorflow, Computer Vision, OpenCV, YOLO

Positions of Responsibility

⦿ **SPICMACAY** - Finance Secretary ⦿ **NCC Army Wing** : 5 Punjab Battalion - Corporal