Anshul Ranjan
Computer Science Engineering
PES University

PES1UG21CS096
UG Second Year (B.Tech.)
Male
DOB: 25/03/2004

Examination	University	Institute	Year	CPI / %
Graduation	PES University	PES University	2025	9.55
Intermediate/+2	CBSE Board	Narayana Olympiad School	2021	94.40
Matriculation	CBSE Board	HAL Public School	2019	94.00

SCHOLASTIC ACHIEVEMENTS

- Ranked in **top 20%** of PES university in 1st, 2nd and 3rd semester   *2023*
- Received **Distinction (top 3)** in PESU IO course Introduction to Machine Learning   *2023*
- Secured All India **Rank 19695** in JEE Mains (B.Tech) exam among 1 million candidates   *2021*
- Secured **Rank 843** in KCET exam among 2 lakh candidates   *2021*
- Cleared the **aptitude test** (stage 1) of **KVPY** Exam SA stream   *2020*
- Cleared **PRMO** and qualified for RMO (Regional Math's Olympiad) and **cleared NTSE** stage 1   *2019*
- Ranked **4th** in 10+2 CBSE board exam in my PU college and **top 10** in 10th CBSE board exam in my school   2021

SCHOLARSHIPS AND AWARDS

- Received **Prof. MRD Scholarship** for being in top 20% students in Sem 1 PES University   *2022*
- Received **Prof. MRD Scholarship** for being in top 20% students in Sem 2 PES University   *2022*
- Received **Prof. MRD Scholarship** for being in top 20% students in Sem 3 PES University   *2023*
- Received **100% Scholarship** in Aakash Coaching Institute for getting **Rank 326** in ANTHE Exam   *2019*
- Received **80% Scholarship** in Narayana Entrance Exam (NACST) for achieving outstanding score   *2019*

MAJOR PROJECTS

Research And Development Project   *PES University*
Guide: Prof. Shivakumar Dalali

A Comprehensive Review of Image Segmentation Techniques   *Apr '23 - Present*
- ◦ The major goal of this study is to provide summarize of the **disadvantages and the advantages** of each of the reviewed approaches of image segmentation.
- ◦ Implementing different image processing techniques using **MATLAB's Image Processing Toolbox**.
- ◦ Devised ingenious code for **image segmentation** *in python - OpenCV* to calculate metrics such as pixel accuracy, recall, and precision.
- ◦ Using *TensorFlow* to use pre-trained models and tools for training **new models** for image segmentation.
- ◦ **Future work** is a review of the use of intelligent technologies such as deep learning and **optimization algorithms** in image segmentation.

- **DataVault (A cloud-based storage app for the modern age)**   *Nov '22 - Apr '23*
  - ◦ DataVault is an application that allows users to **securely store and share their files** using Web3.storage and IPFS. Creating a safe and reliable storage options for our users.
  - ◦ Data Files stored on *IPFS* are resistant to tampering and censorship. It is also **decentralized** with *Web3.Storage*.
  - ◦ The App encrypts user files using **AES and SHA** algorithm before uploading them to Web3.storage, ensuring that only users with the decryption code can access the files.
  - ◦ Made using **Vue** and **tailwind CSS**. The backend is written using JavaScript.

- **Krishi Sahayak – AgriTech Project**   *Kodikon Hackathon*
  The Embrione Club, PESU   *Feb '23-Mar'23*
  - ◦ Web app to **detect pests** in crops and provide **appropriate remedies** based on it.
  - ◦ We use a publicly available and quite famous, the **PlantVillage Dataset**. The dataset was published by **crowdAI** during the "PlantVillage Disease Classification Challenge". The dataset consists of about 54,305 images of plant leaves collected under controlled environmental conditions.
  - ◦ Using **Image Processing** and **Machine Learning** to detect the plant disease based on the photos taken by farmer. We used Python Libraries like **OpenCV** and **TensorFlow** to make this.
  - ◦ The website also includes an **E-commerce page** which can be used to sell Pesticides. The **business aspect** of this project is to tie up with local fertilizer and pesticides seller and show their products on our page for sale.
  - ◦ I used **ReactJS** to make this website and made the backend using **Flask** which was used to deploy the Machine learning model.

COURSE PROJECTS

- **Smart Shopping Carts for Retail Supermarket**   *Microprocessor and Computer Architecture – CS251*
  Guide: Prof. Chitra G M   *Mar '23 - Apr '23*
  - Developed a Smart Shopping cart using **Arduino Mega** as the micro-controller. **RFID module** to identify the products and **Wi-Fi module** (ESP-8266) to transfer the data to database for the application
  - Used **TFT display** for displaying QR code and the final total bill with the items scanned. The automated system could help keep **costs low by reducing** the need for **staffing** and optimizing inventory management

- **Escape The Maze (Video Game)**   *Computer Networks - CS251*
  Guide: Prof. Mahesh H B   *Mar'23 - Apr '23*
  - This is a **multiplayer game** that involves navigating through a maze to reach the end point before your opponent does. The game allows players to connect over a **network** and compete in **real-time** to reach the end of the maze.
  - The game is built using the **PyGame** library for the graphical interface and **Socket programming** in Python for the multiplayer aspect.

- **Golang Mini Compiler**   *Automata Formal Languages and Logic - CS243*
  Guide: Prof. Preet Kanwal   *Oct '22 - Nov '22*
  - A compiler front-end for Golang implemented using **Python Lex and YACC** (PLY) that handles the switch, expression, variables, for loop and if-else constructs of Golang.
  - Made using the **official Grammar** from the Golang documentation. Takes Input a Golang source file and runs the **LALR parser logic** and answers is it syntactically correct or not.

POSITIONS OF RESPONSIBILITY

- **Web Developer**   *Dec '22 – Present*
  IEEE RAS PES University
  - **Developed and designed** the official web page of IEEE RAS PESU making the website dynamic and responsive
  - Used Next.js, tailwind CSS and Typescript for the frontend, also connected the Backend with **headless Content Management System** i.e., Sanity.io
  - Currently working on making a website for **Virtual Labs PESU** using Django

- **Teaching Volunteer**   *Feb '23 – Present*
  Dazzling Star (Non-Profit Organization)
  - Helped in **organizing and conducting** various events for this NGO.
  - **Volunteered** as a math teacher for underprivileged children at a government school . Fostered a supportive and engaging **learning environment** to encourage active participation and enhance learning outcomes.

- **Event Coordinator**   *Mar'23 – Feb'23*
  Aatmatrisha
  - **Organized** an event in Aatmatrisha fest called **Robo-Sumo**. I was responsible for **event planning** and logistics of the event.

TECHNICAL SKILLS

- **Programming Languages**: Python, C, Java, Typescript, VHDL, Golang, Assembly language, HTML, JavaScript
- **Software Packages**: OpenCV, TensorFlow, Scikit - learn, MATLAB, Kubernetes, Git, Linux, Tailwind CSS, Node.js, Pandas, MongoDB, Next.js, NumPy, Docker
- **Micro-controller boards**: Arduino, Raspberry-Pi

KEY COURSES

- **Computer Science Engineering:** Python, C, Statistical Methods, Web Technologies, Data Structure and Algorithms, Operating Systems, Computer Networks, Microprocessor and Computer Architecture, Linear Algebra, AFLL.
- **External:** Introduction to Machine Learning (PESU IO), Machine Learning(Coursera, Deep Learning.AI), AI For Everyone (Andrew NG), Flutter Development with Dart, Linux Kernal Development, The Complete Web developer Bootcamp

EXTRA CURRICULAR ACTIVITIES

Technical Activities
- Secured **First Place** in CyberSecurity Treasure Hunt Conducted by ISFCR PES University — *Oct '22*
- Cleared **Phase-1** of SKILL-A-THON hackathon by Sunbird on Hackerrank — *Mar '23*
- Achieved **Top-10** in Kodikon Hackathon(By Embrione Club) at PES University — *Feb '23*
- Secured **Top-5** in Computational Math Competition Conducted by Shunya club PES University — *Feb '23*
- **Participated in 24 hr. hackathon** Arithemania conducted by Shunya club PESU — *Apr '23*
- Reached **final Round** in a 24 hr. Hackathon Conducted online by Devfolio. — *Nov '22*

Sports
- Won **First Price** in Inter-Department Sports Fest Football tournament at PES University — *Mar '22*
- Won **First Price** in Aatmatrisha football tournament at PES University — *Apr '22*
- Won **Gold Medal** in Basketball, Football , Cricket and dodgeball at Inter-Narayana Sports Fest — *'20*
- **Finished top 5** in Adidas Unfair football tournament out of 300 teams — *'20*
- Won **Gold Medal** in Dodgeball, Basketball and Table Tennis at HAL Public School — *'19*

Other Skills
- Won **Second Price** in Aatmatrisha Treasure Hunt at PES University — *Apr '23*
- Got All India **Rank 60** in IMO conducted by SOF — *'19*
- Won **First Price** in National Children Science Congress District Level conducted by National Council of Science and Technology Communication, Government of India — *'16*
- **Participated** in National Children Science Congress National Level conducted in **New Delhi** by National Council of Science and Technology Communication, Government of India — *'16*