

# Ananya Ghosh

Pre-final year, Integrated 5yr MTech (Computer Science & Engineering)  
Vellore Institute of Technology, Vellore (NIRF rank 11<sup>th</sup> 2023)

**Artificial Intelligence, Machine Learning, Deep learning, Data Science,  
Federated Learning, NLP, Full stack Software Developer**

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FIND MY PROFILE



Passport: Valid up to 2029

## PROFILE SUMMARY

I am a 4th year student pursuing Integrated MTech (CSE) at Vellore Institute of Technology (VIT), Vellore (NIRF rank 11<sup>th</sup> 2023). I have worked on **16 projects** on different technical domains including Artificial Intelligence (AI), Machine Learning (ML), Deep Learning (DL), Natural Language Processing (NLP), Data Analysis, Full Stack Web Development etc, using Python, C and C++. I have worked on **7 internships** at DRDO, SocialWell, Goldman Sachs and LetsGrowMore etc. I have engaged myself in **12 research works** on different technical domains including AI, ML, DL, NLP etc, out of which one paper got already published, 3 papers are accepted at international conferences and 6 are under review by publication houses and rest of the research works are in progress. Along with my own domain knowledge, I have a fair understanding of Healthcare, Environment, Sustainability, Net Zero, Carbon Footprint etc.

## EDUCATION



Vellore Institute of Technology, Vellore, India  
Integrated M Tech in Computer Science & Engineering (CSE), 2020-2025, 4<sup>th</sup> year Student



Delhi Public School, Ruby Park, Kolkata, India  
AISSE CBSE (10+2) PCMB, 2018-2020, **94%**



G.D. Birla Centre for Education, Kolkata, India  
ICSE (10<sup>th</sup>), 2006-2018, **96%**

## RESEARCH WORK & PUBLICATIONS

As an Undergraduate Researcher at Vellore Institute of Technology, I have undertaken various research project under guidance of some eminent professors.

- **Research 1:** Artificial Intelligence In Bringing A Revolution In The Healthcare Industry- (E-ISSN: 2456-5571) Jan 15, 2021 BODHI International Journal of Research, Research & Publication Services (CRRPS), India (**Published**) - [Link](#)
- **Research 2:** DifEvoDenseFed: Differential Evolution Optimization based DenseNet Federated Model in Alzheimer's detection- (**Published**) - [Link](#)
- **Research 3:** DenseFed-PSO: Particle Swarm Optimization based DenseNet Federated Model in Alzheimer's detection- (**Accepted**- 8th International Symposium on Intelligent Informatics (ISI'23))
- **Research 4:** FedXAI-ISL: Explainable Artificial Intelligence based Federated Model in Indian Sign Language- (**Accepted**- International Conference on Innovative Computing and Communication (ICICC'24)
- **Research 5:** Multimodal Quantized GenerativeAI and LLM models with Sensory Network based Research - (Ongoing)
- **Research 6:** Alzheimer's Disease Prediction using AxCoSa Multi-Deep Neural Network Architecture - (Under Review- Springer-SCImago)
- **Research 7:** Federated Average Distillation Conditional Mutual Learning in Waste Management- (Under Review- Springer-SCImago)
- **Research 8:** Federated Average Evolutionary Stochastic Gradient Learning in Marine Plastic Pollution Management- (Under Review- Springer-SCImago)
- **Research 9:** Hyper-Parameter-Tuned-Ensembled-Transfer Learning- Genetic-Algorithm-Optimized-Model-PCOS-Prediction - (Ongoing)
- **Research 10:** Comparative Analysis on Ensemble Crow Search Algorithm and Ant Colony Optimization on Heart Disease and Breast Cancer Detection- (Under Review- SCOPUS)
- **Research 11:** Synergizing IoT and Drone Solutions for Advanced Surveillance and Integrated Health Monitoring- (Ongoing)
- **Research 12:** Chronic-Kidney-Tumor-Detection-using-ML-DL - (Ongoing)

## Technical Blogs

- Artificial Intelligence in Healthcare- [Link](#)
- Future & Scope of IoT- [Link](#)

## NOTABLE ACHIEVEMENTS

- ✳ **Two Merit Certificates** (Top 3 students in the class), awarded for the year 2020-21 & 2021-22 at VIT.
- ✳ **'Achiever Certificate'** awarded by VIT in 2021-22, for Outstanding Performance at National level Competitions.
- ✳ **Microsoft Learn Student Ambassador (Beta)** appointed by Microsoft and **IBM Z Ambassador** appointed by IBM
- ✳ **10+ Tutorials Delivered** for Students of various universities/ engineering colleges (including peers and seniors)
- ✳ Won several **Hackathons** at National & international events
- ✳ **Technical Head** in Board of IEEE Women in Engineering, VIT.
- ✳ **Scholar Badge** by DPS Ruby Park School for Outstanding Academic Performance in 12th board CBSE examination.

## KEY SKILLS

### ➤ Artificial Intelligence

Machine Learning, Federated Learning, Transfer Learning, Deep Learning, Neural Network, Natural Language Processing, Computer Vision, Data Science, Explainable AI (XAI), Generative AI, LLM, Langchain

### ➤ Full Stack Web Software Development

UI/UX (Figma), Frontend (HTML, CSS, Angular, JavaScript, Tailwind), Backend (Django, Flask, NodeJS), Database (SQL), ODK, ETL, Software Development Life Cycle, Jenkins, Git, Docker

### ➤ Coding Languages - Python, C/C++, Java

### ➤ Internet of Things- IoT APIs, Arduino, Drone, RaspberryPi, Sensors

### ➤ Blockchain - Ethereum, Solidity

### ➤ Augmented Reality- Unity3D, C#, Vuforia

## INTERNSHIP EXPERIENCE



**MITACS GRI** (prestigious fully funded global research internship)



**University of British Columbia, Canada** (QS World Rank 34)

AI, NLP, DL & Software Research Intern (May 2024-Aug 2024)



**Defence Research and Development Organisation (DRDO)**

Software Development and Quality Intern (May-June, 2023)



**Microsoft**

Beta Microsoft Learn Student Ambassador (October 2021-January 2023)



**IBM**

IBM Z Ambassador (September 2021-2023)



**Goldman Sachs**

FinTech Virtual Experience Program (December 2022)



**Social Well (IT Company in Agri)**

AI & ML Intern, December 2022 - March 2023



**GirlScript WoC**

Open Source Contributor (Python Backend Dev, Open Source, ML)  
August 2021-December 2021



**LetsGrowMore**

Web Development Intern (June 2021-July 2021)

## POSITIONS OF RESPONSIBILITY



**IEEE Women In Engineering**, Technical Head, 2021-23

**IEEE Signal Processing Society**, Senior Core Committee

**IEEE Professional Comm Society**, Technical Mentor

**Institution for Engineering and Technology**, Core Member

## ACADEMIC COURSES AND SKILLS COMPLETED

- Operating System Principles and Linux
- Software Engineering Principles
- Application Development and Deployment Architecture
- Cloud Computing Technologies
- Digital logic and Computer Design
- Data Structures and Advanced Algorithm Analysis
- Database Management Systems
- Principles of Compiler Design
- Data Communication and Networks TCP/IP
- Programming in Java
- Front End Design and Testing, Server-Side Programming
- Microprocessor Interfacing
- Applied Cryptography and Network Security, Cyber Security
- Artificial Intelligence and Expert Systems
- Advanced Python/ C Programming
- Deep Learning, Machine Learning, Soft Computing
- Natural Language Processing and Computational Linguistics
- Internet of Everything
- Blockchain Technologies

## MY PROJECTS (Excluding Research Work)

1. **LifeAI- Multiple Disease Predictor Software**  
Predicts Alzheimer's Dementia Prediction- 2D CNN for Dementia Architecture, Breast Cancer Prediction- Hyperparameter Tuning and Genetic Algorithm, Heart Disease Prediction- Ensemble Learning with Ant Colony Optimization, Diabetes Prediction- Supervised Learning with Crow Search Optimization, Parkinson's Disease Prediction- Voice data SVM, Lung Cancer prediction using XGBoost- [Link](#)
2. **Simple GPT OpenAI API, Langchain, LLM based Target database**  
Question Answer Flask Web application for Women Health- [Link](#)
3. **Patient Condition Prediction and Drug Recommendation** using Flask, NLP, ML classification, Speech to text and sentiment analysis features- [Link](#)
4. **Industrial Incident Reporting, Investigation & Management Software**- Full Stack Web Software Development- [Link](#)
5. **ESG Software (Environmental, Social, Governance)** - Full Stack Web Software Development- [Link](#)
6. **Tuition Management System** - Full Stack Web Software Development- [Link](#)
7. **EduVision - AR based Education** for All while connecting all stakeholders of Education Augmented Reality & Web Development- [Link](#)
8. **KrishiSahayak**- Full stack Web Application to connect all the stakeholders of the Agriculture system in India - [Link](#)
9. **Donation and Vaccine**- Web Application and chatbot for organ, plasma and blood donation and COVID-19 vaccine program registration - [Link](#)
10. **Fake Job Detection** using NLP and Machine learning- [Link](#)
11. **Sentiment Analysis of Twitter** using NLP and Machine learning- [Link](#)
12. **Real Time Web Chat Application** using Node Js & Socket.io- [Link](#)
13. **HackX Website**- The Hackathon website for IEEE SPS VIT Hackathon - [Link](#)
14. **Game Database Website** using AngularJs and a public API- [Link](#)
15. **ToDo App** using AngularJs and Azure Services- [Link](#)
16. **Handwritten Text Recognition, Face recognition** using OpenCV and pytesseract- [Link](#)

## TUTORIALS DELIVERED

**10+ Tutorials Delivered** in Online/Offline mode for Students of various universities and engineering colleges (including peers and seniors), on various topics on Node Js, AngularJs, Azure, Full Stack Web Development, Django Backend, Data Structures, Space Science, Arduino and IOT.

- Microsoft Learn Student Ambassador Webinars- [Visit](#)
- Django - [Visit](#)
- Complete Web Development Roadmap- [Visit](#)
- Arduino session- [Visit](#)
- Arrays || Data Structures- [Visit](#)
- SEDS VIT Outreach Session || Basics of Space and Astronomy- [Visit](#)

## EXTRACURRICULAR ACTIVITIES



**Students for the Exploration and Development of Space, VIT**  
Core Committee Member, Jan 2021-Jan 2023



**Team UAV, VIT**  
Core Committee Member, Jan 2021-Mar 2021



**Energy & Environment Protection Club, VIT**  
Core Committee Member, Jan 2021-April 2021



**International Model United Nations**  
Official Campus Ambassador, June 2021-January 2022

## HACKATHONS

- ★ HackOff v3.0 IET VIT
- ★ HackVerse 2.0 NIT Suratkal
- ★ SheHacks'21, IIIT Allahabad
- ★ Women Techies'21 DSC VIT
- ★ HackNITR 2.0 NIT Rourkela
- ★ MozoHack 2.1 SRM KZILLA,
- ★ HackTriX IEEE SRM
- ★ BU Hack Bennett University
- ★ BitBox DSC JIIT
- ★ KJSCE Hack 5.0 Code Cell
- ★ iHack ISA VIT
- ★ Tempora IEEE SPS VIT
- ★ HULT PRIZE CHAMPIONSHIP 2021 On- Campus

## CULTURAL

Won several awards at School & college and various state level competitions -

- ★ Singing (Indian Classical & Contemporary)
- ★ Dancing (Kathak & Indian Contemporary)
- ★ Painting
- ★ Recitation

## COUNTRIES VISITED

France, Italy, Switzerland, Hong Kong, Egypt, Dubai, Thailand, Sri Lanka, Maldives

## CODING & RESEARCH PROFILES

ResearchGate- <https://www.researchgate.net/profile/Ananya-Ghosh-11>

GitHub- <https://github.com/A-GHOSH-dev>

Hackerrank- [https://www.hackerrank.com/ananya\\_ghosh2020?hr\\_r=1](https://www.hackerrank.com/ananya_ghosh2020?hr_r=1)

Leetcode- <https://leetcode.com/AnanyaGhosh/>