DEEPESH DHANVIJAY

ELECTRONICS AND COMMUNICATION ENGINEERING SENIOR

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Date of Birth: 12/12/2002
Gender: Male

EXPERIENCE THROUGH INTERNSHIP

July 2025(4 weeks)

Software Development Internship, CodTech IT Solutions.

- Developed a static website for a developer's portfolio using HTML, CSS and JAVASCRIPT.
- Designed a restful API for a library or inventory system, implementing CRUD Operations.
- Developed a collaborative tool for coding or note-taking, similar to Google Docs, Using Websocket for real-time updates.
- Took an open-source project and refactor it to improve readability and performance.

JANUARY 2025 – JUNE 2025

Multimodal approaches and AI-driven innovations in dementia diagnosis: a Systematic review, M.E.S. College of Engineering Pune.

- Reviewed recent studies on neurodegenerative disorders, focusing on Alzheimer's Disease (AD) and Frontotemporal Dementia (FTD), analyzing their pathophysiology, progression patterns, and diagnostic criteria.
- Investigated Machine Learning, Deep Learning, and multimodal fusion techniques applied to dementia care, utilizing neuroimaging biomarkers, EEG profiles, digital phenotyping, and wearable sensor analytics.
- Evaluated different frameworks based on sensitivity, specificity, interpretability, computational efficiency, and clinical applicability for early detection and disease monitoring.
- Highlighted limitations in transparency, generalizability, and the need for Explainable AI (XAI) to enhance trust and usability in clinical settings.
- Suggested a data-agnostic, patient-centered approach integrating genomics, imaging, behavioral, and contextual data to drive precision-based, AI-augmented dementia care.

MAY 2024 – FEBRUARY 2025

Cyber Intrusion Detection Using Ensemble of Deep Learning with Prediction Scoring Based Optimized Feature Sets for IOT Networks, M.E.S. College of Engineering Pune

- Implemented MissForest imputation and one-hot encoding to ensure high-quality input data for the IDS.
- Utilized Median-based Shapiro-Wilk test and Correlation-Adaptive LASSO

EDUCATION

BTech – Electronics and Communication Engineering (CGPA: 7.01/10)
National Institute of Technology, Tiruchirappalli (2024)

10th ICSE Board (86.40%)
Mount St. Patrick Academy, Pune.

12th TSBIE Board (96.60%)
Sri Chaitanya Junior college, Hyderabad.

ACADEMIC ACHIEVEMENTS

Ranked among the top 0.5% of JEE-MAINS 2020

Secured 50th rank among 1000+ participants in Masai School DSA contest.

Rated 3-star on Codechef and 5-star in problem solving on Hackerrank.

Secured 155th rank among 500+ teams coding contest conducted by SHASSTRA(IITM).

Regression (CALR) to enhance model accuracy by selecting meaningful features.
- Developed an ensemble of Global Attention LSTMs with residual connections and attention mechanisms to capture temporal patterns in IoT traffic.
- Integrated the Exploit Prediction Scoring System (EPSS) to provide insights into prediction scores, improving trust and decision-making in threat detection.

JUNE 2023 – AUGUST 2023

Deploying Login API On Amazon Web Services – EC2, TECH MAHINDRA

- Worked with development team of web platform for login page creation and hosting on AWS EC2.
- Utilized MySQL for backend data base and for polished and responsive front end I used HTML, CSS, Java script, JS node.
- Worked on the visual part of the website – the pages visitors see and interact with the design of physical layout of each page, integrating graphics to enhance the site.

Project Report
Internship Certificate

PAPER PUBLICATIONS

JUNE 2025

Multimodal approaches and AI-driven innovations in dementia diagnosis: a systematic review, NIT TRICHY, M.E.S College of Engineering Pune.

- Deepesh M. Dhanvijay et al., Multimodal approaches and AI-driven innovations in dementia diagnosis: a systematic review. *Discov Artif Intell* 5, 96 (2025). https://doi.org/10.1007/s44163-025-00358-x

FEBRUARY 2025

Cyber Intrusion Detection Using Ensemble of Deep Learning with Prediction Scoring-Based Optimized Feature Sets for IoT Networks, NIT TRICHY, M.E.S College of Engineering Pune.

- Deepesh M. Dhanvijay, Mrinai M. Dhanvijay, Vaishali H. Kamble, Cyber Intrusion Detection Using Ensemble of Deep Learning with Prediction Scoring Based Optimized Feature Sets for IOT Networks, Cyber Security and Applications, 2025, 100088, ISSN 2772-9184, https://doi.org/10.1016/j.csa.2025.100088.

JUNE 2022

Implementation Of E-Harp Routing Protocol In Wireless Body Area Networks Using Matlab, NIT TRICHY, COEP.

- Deepesh M Dhanvijay, Maneetkumar R Dhanvijay, Sudhir Madhav Patil, "Implementation Of E-Harp Routing Protocol In Wireless Body Area Networks Using Matlab", ICTACT Journal on Communication Technology, Volume: 13, Issue: 2, June 2022.

Research Paper

RESEARCH INTERESTS

Artificial Intelligence

Machine Learning

Deep Learning

Web development

VLSI

COURSES

Digital Circuits and Systems – 'A' Grade (9/10)

Signals and Systems – 'S' Grade (10/10)

Remote Sensing and GIS – 'A' Grade (9/10)

LANGUAGES

- **English**
- **Hindi**
- **Marathi**

WORKSHOPS, PROJECTS

MARCH 2024 – MAY 2024

FOSTERING COLLABORATIVE HEALTH CARE: PRIVACY – PRESERVING MEDICAL IMAGE SEGMENTATION WITH FEDERATED LEARNING, NIT TRICHY

- Used Federated Learning (FL) for medical image segmentation, fostering multi-institutional collaboration while safeguarding patient privacy.
- Used FL which enables decentralized model training, preserving data privacy by aggregating model updates instead of sharing raw data.
- Privacy protection strategies like data anonymization are implemented.
- FL's feasibility in segmenting medical images and considering data separation based on features for improved model performance.
- Real healthcare data is used for evaluation, aiming to develop predictive models for healthcare applications.
- The outcomes promise enhanced healthcare delivery through collaborative, privacy-preserving model development.

Thesis

JANUARY 2022

Human Gesture and Emotion detector, NIT TRICHY

- I have developed a project titled Human Emotion and Gesture detection in Deep Learning Workshop, conducted by **Probe, NIT Trichy**.
- Trained the gesture model and looked at the ways to achieve higher accuracy on the emotions model using Python language and by using VGG-16 architecture for training the model and using the techniques of Image data augmentation.
- Goal of this project is to communicate with people having disabilities like Hearing loss and Speech impediment.

APRIL 2022

Online Payment Fraud Detection, NIT TRICHY

- Took a credit card dataset and performed data pre-processing on it.
- Using certain columns of the dataset, made an input vector for the model, made an output vector using "isFraud" column.
- Trained a Decision Tree Model on the input vector and output vector.
- Trained model then predicts whether transaction is fraud or not when an input vector is passed through it.

JUNE 2021

Prediction Model for Heart Disease, NIT TRICHY

- In this project, a Logistic Regression Classifier is developed using Logistic Regression Machine Learning Algorithm.
- The classifier is trained to predict if a person may have heart disease or not based on his/her blood pressure level, age, cholesterol level and other variables.
- Python, Sklearn and Pandas are few of the tools used in this project which was made on Google Collab Platform.

POSITIONS OF RESPONSIBILITY

SEPTEMBER 2022 – APRIL 2023

PRAGYAN MANAGER, TECH FEST, NIT TRICHY

- Worked as a manager of Workshop Team of **Pragyan'23** an international techno-managerial festival of **Nit Trichy**.

EXTRACURRICULARS

District-Level football, NITT Institute Team Football Player

Inter-School Football, Basketball, Chess, Marathon, Table-Tennis, Volleyball.

Gold Medalist at Happy feet Football Academy, Pune.

Ideated events for Leap, Environmental Club, NIT TRICHY.

Donated blood in events organized at NITT Hospital and A-Flight NCC NITT

Volunteered NSS at NITT with Deputy Manager.

- The scope of this role was to conduct activities from various fronts, ranging from contacting a company to convincing students to take the opportunity provided and publicize the workshop conducted by the fest.

JANUARY 2022

PROBE CORDINATOR, ECE DEPT. SYMPOSIUM, NIT TRICHY

- Worked as a Coordinator of Workshop Team of **Probe'22**, the national level technical symposium of department of **Electronics and Communication Engineering, NIT Trichy**.

- As a part of the team, conducted a Deep Learning workshop for 200+ participants.

APRIL 2021 – SEPTEMBER 2022

FESTEMBER DEPUTY MANAGER, CULTURAL FEST, NIT TRICHY

- Worked as a deputy manager of Public Relations Team of **Festember'22**, the National level inter college cultural fest of **NIT Trichy**.
- As a part of the helpdesk and coordinator team, work specifically involved in dealing with Students, from their registration to accommodation.

COMPUTATIONAL SKILLS

PROFICIENCY IN PYTHON:

- Completed 100 days of code : The Complete Python Pro Bootcamp. Learned and completed projects on Data Science, Python Automation, Web Development, GUI Automation, Game Building, CSS, HTML, OOP at **UDEMY**.
  Certificate Link

PROFICIENT C++ USER:

- Learned Data Structures and Algorithm in C and C++ at **Broadcast Engineering Consultants India Limited (BECIL).**
  Certificate Link

FRONT-END WEB DEVELOPER:

- Worked with languages JavaScript, CSS, HTML, JS Node and created a login page during the internship at **Tech Mahindra.**

SOFTWARE SKILLS:

- SQL, Python(pandas), MS Office, Web scraping, Statistics, Power BI

PROFICIENCY IN ENGINEERING SOFTWARES:

- LTspice, Proteus, emu8086