

JITHIN RAJAN

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Education

National Institute of Technology, Tiruchirappalli

2021 – Present

Bachelor of Technology in Electronics and Communication Engineering

CGPA: 8.08/10 - upto 6th Sem

Minor in Computer Science and Engineering

Expected Graduation: 2025

Maharishi International Residential School, Tamil Nadu

2019 – 2021

All India Senior School Certificate Examination - CBSE

Percentage: 98%

Publications

Self-Governing Assessment Network (SGAN) Based Super-Resolution for CT chest images

[\(link\)](#)

2023 International Conference on Computer, Electronics & Electrical Engineering & their Applications (IC2E3)

Research Experience

Indian Institute of Technology, Bombay

May 2024 – Present

Undergraduate Research Assistant - Onsite

- Collaborating with Dr. Hari M. Varma at the Theoretical and Experimental Biological Imaging (TEBI) Lab to develop **deep learning models for solving stochastic differential equations**.
- Focused on **estimating precise blood flow indices** in the human brain for advanced biomedical applications.

Nanyang Technological University, Singapore

Jun 2023 – Sept 2023

Research Internship - Remote

- Conducted research under the guidance of Dr. Anupam Chattopadhyay to **analyse vulnerabilities in gossip protocol based federated learning models under data poisoning attacks**.
- Designed and implemented strategies to enhance the robustness of machine learning models against adversarial threats.

Indian Institute of Technology, Roorkee

Jun 2023 – Jul 2023

Research Internship - Onsite

- Developed an SFSC (Spectral Fourier Shell Correlation)-based algorithm under the guidance of Dr. Jitin Singla for **aligning GroEl Cryo-electron tomography 3D data**.
- **Optimised the algorithm** by implementing advanced gradient descent methods, **achieving a 25% reduction in computation time** and an **8% increase in accuracy**.

National Institute of Technology, Tiruchirappalli

Feb 2023 – Jun 2023

Undergraduate Research Assistant - Onsite

- Worked alongside Dr. S. Deivalakshmi to develop a novel super-resolution algorithm, achieving a **9.27% improvement in PSNR** and a **6.17% enhancement in SSIM** compared to existing models.
- **Co-authored and published the research paper** titled "Self-Governing Assessment Network (SGAN) Based Super-Resolution for chest CT images", and presented it at the IC2E3-2023 Conference by IEEE in NIT Uttarakhand.

Work Experience

Perfios Software Solutions Pvt. Ltd.

Nov 2022 – Mar 2023

Data Science and Consulting Intern

- Performed an **in-depth analysis of the retail banking market across 21 MENA countries**, covering market sizing, competitor dynamics, and legal compliance.
- **Evaluated features of over 9 SaaS products** and recommended tailored modifications to align with market needs.
- Applied data mining techniques and studied **ML models for loan risk assessment** and repayment prediction.

Courses and Certifications [\(link\)](#)

Machine Learning Specialisation | Python, TensorFlow, Matplotlib

Coursera

- Completed a specialization of **3 courses** by Dr. Andrew Ng offered by Stanford University and DeepLearning.AI.

Introduction to Computer Vision and Image Processing | Python, OpenCV

IBM

- Completed an intensive course on the fundamentals of computer vision and image processing using Python by IBM.

Technical Skills

Programming Languages: Python, C++, C, Java, MATLAB, HTML, JavaScript, SQL, LaTeX

Libraries: OpenCV, NumPy, Pandas, Matplotlib, Scikit-learn, Keras, React

Frameworks: TensorFlow, PyTorch, Flask

Developer Tools: Git, Hugging Face, VS Code, Android Studio

Projects

Sign Language Interpreter | *Python, TensorFlow, Streamlit*

- Developed a robust still and **real-time sign language translator** to enhance accessibility for the hearing impaired.
- Engineered multiple **LSTM (Long Short-Term Memory) models in sequence with dense neural networks** using Python and TensorFlow for accurate gesture recognition.
- Designed an intuitive front-end interface using Streamlit for seamless user interaction.

Digital Phenotyping | *Python, TensorFlow*

- Collaborated with Dr. Smitha KG, Senior Lecturer at NTU Singapore to build a **CNN-based deep learning model which achieved 95%+ accuracy** on Keystroke Dynamics Benchmark Dataset.
- Working on adapting the model for different datasets and advancing it for improved detection of Parkinson's disease.

Dino Games | *OpenCV, PyAutoGUI*

- Implemented a hand gesture-controlled gameplay version of Google Chrome's Dinosaur Game using Python and OpenCV, enabling human-computer interaction without a keyboard.
- Incorporated live video capture, convex hull analysis and automated keypress actions using PyAutoGUI.

Hackathons

Co(1)de-Play | *Tezos Blockchain, Python, React*

Transfinitte, 2024

- Developed an **event ticketing platform leveraging blockchain technology like smart contracts** to curb inflated resale prices, ensuring secure ticket ownership, verification, and controlled resale.
- Integrated **Tezos blockchain with Etherlink** (L2 Blockchain) for offloading heavy processing, enabling instant transaction handling during high-demand booking periods.
- Built a **responsive frontend using React**, bundled with Vite, and linked with Temple Wallet for user authentication and wallet management.

Extra-Curricular

Marketing Team & Treasury, Festember

Apr 2022 – Present

Senior Marketing Manager and Treasury Executive

NIT Trichy's Annual Cultural Fest

- Raised **sponsorship worth Rs. 36,00,000** through major MNCs and analysed major youth marketing trends.
- Managed offline branding **deliverables for 60+ companies** during the fest and outreaches in Bangalore and Chennai.
- **Increased the budget of the fest by 15%** and responsibly **handled finances worth over Rs. 15 million**.

Content Team, NITTFEST

Feb 2022 – Sep 2022

Content Writer

NIT Trichy's Annual Inter-Departmental Fest

- Managed Medium blogs and created social media content for the fest, enhancing its online presence.
- Delivered speeches and hosted events as the Master of Ceremonies, engaging an audience of over 3,000 attendees.

Volunteering (certificates)

Spark-A-Change Foundation, Mumbai

Jun 2024 – Aug 2024

Educator

- **Taught Mathematics and English to underprivileged students** from Grades 1–9 on a biweekly basis, fostering their academic growth.
- Organized post-class distribution of healthy meals and coordinated engaging weekend activities.

180 Degrees Consulting (NIT Trichy Chapter)

Oct 2022 – Mar 2023

Junior Consultant

- 180 Degrees Consulting is the **world's largest consultancy for non-profit organisations** and social enterprises.
- Restructured and **executed the client acquisition process** and worked on expanding the mentor network.
- Undertook **one Go-To-Marketing(GTM) consulting project, conducted two case competitions** and organised ConsultXpo (flagship annual event of the club).

BloodConnect

May 2022 – Jan 2023

Strategy Volunteer

- Conceptualised and assisted in **implementing strategies to expand the organisation's reach** and raise awareness about blood donation among college students.

National Service Scheme (NSS)

Jan 2022 – Dec 2022

On-site Volunteer

- Participated in **campus cleaning initiatives** and **proposed service projects focused on cleanliness and education** in villages near Tiruchirappalli, Tamil Nadu.

Toastmasters International, Bahrain

Jan 2018 – Jun 2018

Vice President Membership

- Served on the Executive Committee of the C2A Gavel Club, managed new member onboarding, and **organised three membership-building events** to drive club growth.