NGNLab
Next Generation Networks

WEBSITE DOCUMENTATION

NGNLAB WEBSITE - Documentation

INDEX:

INTRODUCTION

In the age of digital connectivity and information sharing, a well-designed and user-friendly website is an indispensable asset for any research laboratory. This document serves as a detailed report on a cutting-edge NGN Labs website, which utilizes HTML, CSS, JavaScript, and JSON files to create an engaging and informative online platform. The website encompasses several key sections, including the About page, Faculty page, Research Groups page, Publications page, Collaborators page, Funded Projects page, Newsroom page, and Contact Us page. Each of these sections has been meticulously crafted to enhance user experience, facilitate seamless navigation, and showcase the lab's achievements and expertise.

The NGN Lab website exemplifies modern web development practices and employs a range of technologies to deliver a polished and interactive online presence.

- HTML, the backbone of the website, provides the structure and semantic markup for content.
- CSS enhances the website's aesthetics by defining its visual presentation, ensuring a consistent and appealing design across all pages.
- JavaScript, a powerful scripting language, has been utilized to add interactivity and dynamic elements, enriching the user experience.
- JSON files have been employed for efficient data storage, retrieval, and manipulation, enabling seamless integration of various features and functionalities.

Key Website Sections:

I. **Home Page:** Providing insights into the lab's mission, expertise, history, and collaborations.

II. **Faculty Page:** Showcasing the lab's talented researchers, scientists, and team members with comprehensive profiles.

III. **Research Groups Page:** Highlighting specialized research groups within the lab and their focus areas.

IV. **Publications Page:** Displaying the lab's scholarly output and scientific contributions through an organized research repository.

V. **Collaborators Page:** Showcasing collaborative partners and institutions, fostering interdisciplinary connections.

VI. **Funded Projects Page:** Demonstrating ongoing and completed research initiatives, highlighting grant success and scientific advancements.

VII. **Newsroom Page:** Keeping visitors informed about the lab's latest news, breakthroughs, and media coverage.

VIII. **Contact Us Page:** Enabling convenient communication and inquiries with lab members through contact information and forms.

It provides an engaging and informative experience, fostering collaboration, knowledge dissemination, and effective communication. This report analyzes the website's structure, design, and functionality, highlighting its significance in promoting the lab's work within and beyond the scientific community.

HOME PAGE

Purpose of the Home page:

The purpose of the Home page is to serve as the main entry point or starting point for visitors. It is the first page that users encounter when they visit the website by typing in the domain name or clicking on a link. The home page introduces the NGNLab and provides an overview of its purpose and research domains. The home page also contains important headlines and contact information to facilitate communication between the website owner and visitors.

Content of the Home page:

The Next Generation Networks Laboratory (NGNLab) in the Department of Computer Technology, Anna University, MIT Campus, was established in 2012 with the Department of Science and Technology (DST) sponsor. The lab's principal investigator is Dr Gunasekaran Raja, a Professor in the Department of Computer Technology at Anna University. He is a Postdoctoral Fellow from the University of California, Davis, USA.

The NGNLab has over 100 publications in high-impact factor journals such as IEEE Transactions on Intelligent Transportation Systems, Vehicular Technology, Internet of Things, Industrial Informatics, etc., and conference articles in venues such as IEEE: INFOCOM, GLOBECOM, ICC, VTC, ACM: MobiCom, etc. The working groups in the lab have conducted several collaborative projects in the domains of Next Generation Networks, Unmanned Aerial Vehicles, and Autonomous Vehicles with a specialized focus on networking via 5G & 6G, artificial intelligence, vision-based approaches, blockchain, and cybersecurity funded by national and international agencies, including DST, Erasmus, DAAD, and more.

Owing to the diverse and novel research, NGNLab has been sanctioned grants for noteworthy projects such as autonomous camera drones for an interactive experience, intelligent handoff optimization in next-generation networks, the development of an automatic steering control system in manually operated tractors, intelligent blockchain framework for a secure and automated SCM for SMEs, as well as a traffic management mechanism for public safety. All such undertakings of NGNLab are closely collaborating with researchers from within India and across top-tier universities in the USA, Germany, Ireland, Italy, the UK, Singapore, Qatar, and more.

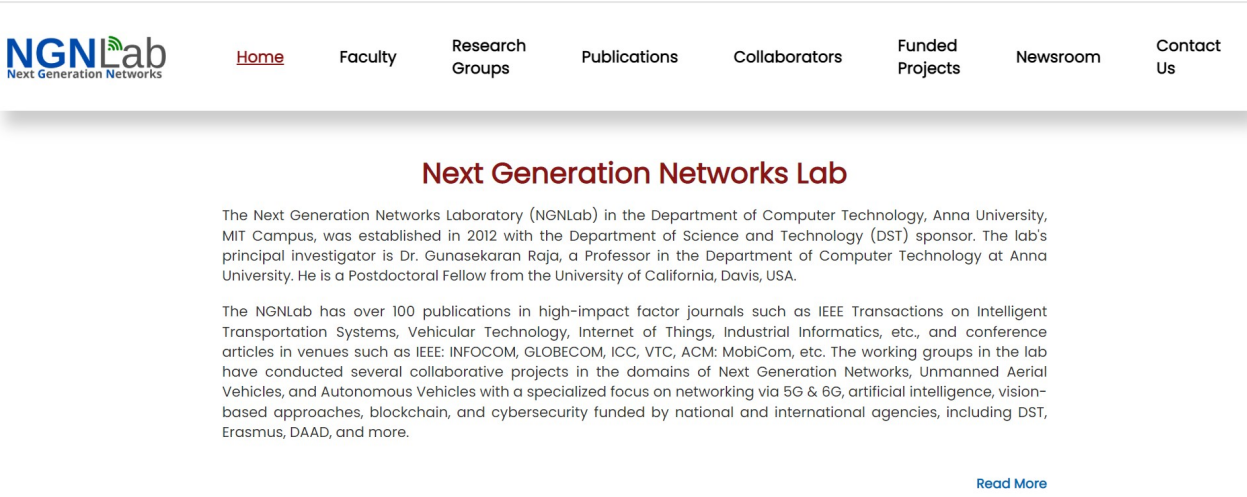
The NGNLab provides international exposure via collaborative research with top researchers worldwide and student exchange with international collaborators at the University of California, Davis, USA, Trinity College, Dublin, Ireland (under Erasmus+ Credit Mobility), University of Jena, Germany (under DAAD Indo-German), etc. Numerous internship opportunities in Fortune 500 companies like SAP, Amazon, etc., are also supported by alumni networks in companies like Microsoft, Apple, Google, etc.

The NGN alumni are pioneers in various academic professions, and many have received fellowships from reputed national and international bodies. They are at the forefront of state-of-the-art research in leading domains in the current worldwide economy. The lab has been a

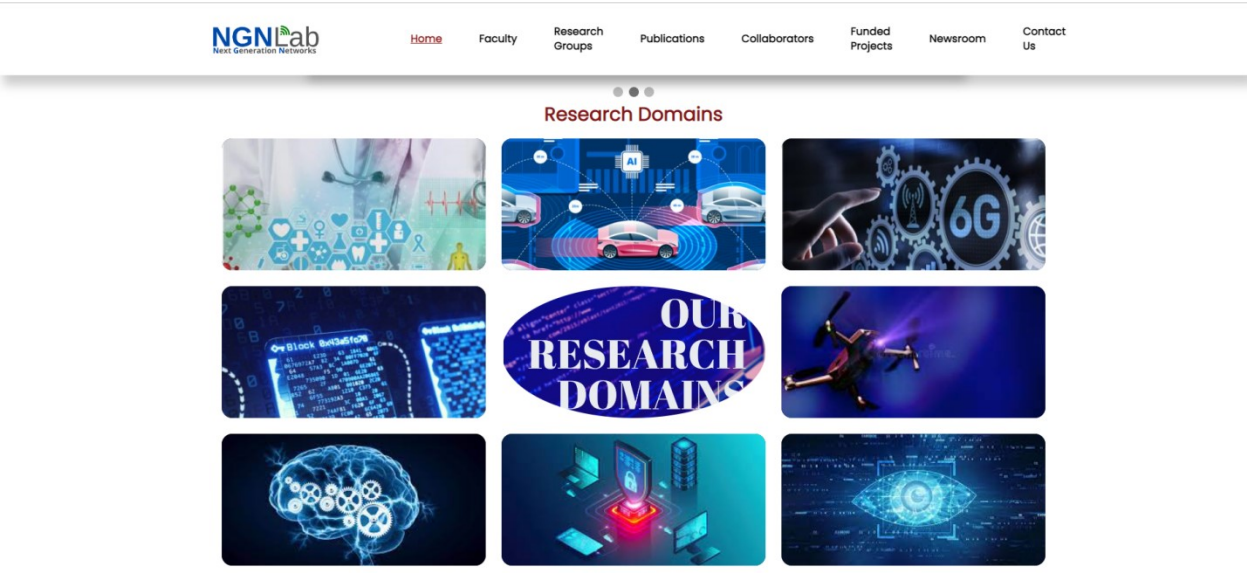
foundation for many successful ventures and innovative research, with its members constantly and passionately striving to accomplish the novel.

HOME PAGE SCREENSHOTS

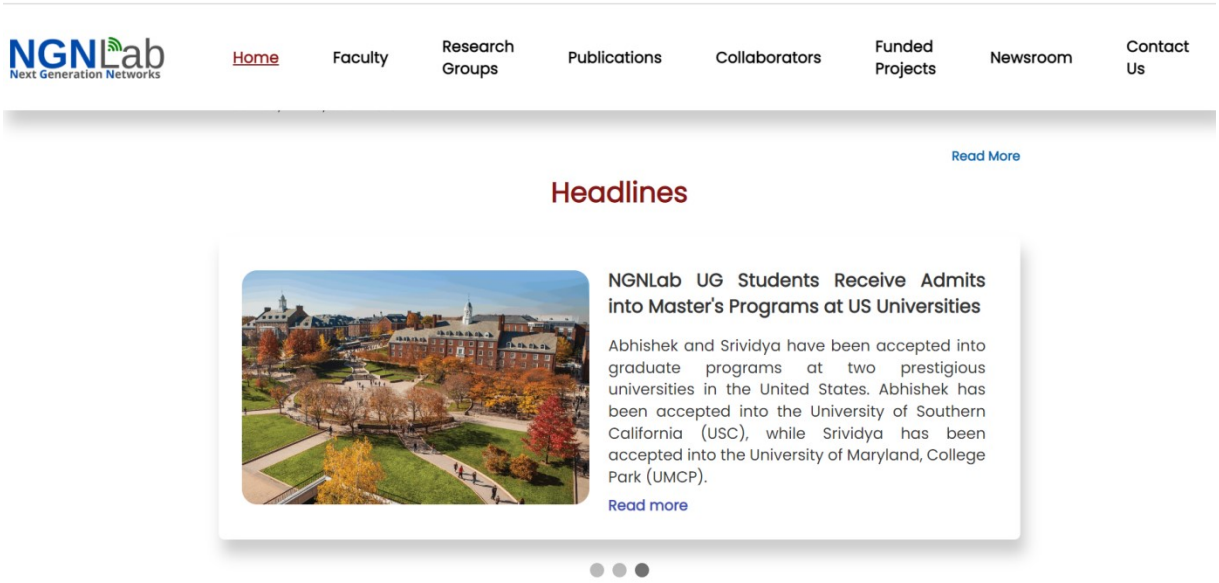
Home Page- About NGNLab



Home Page- Research Domains



Home Page- Headlines



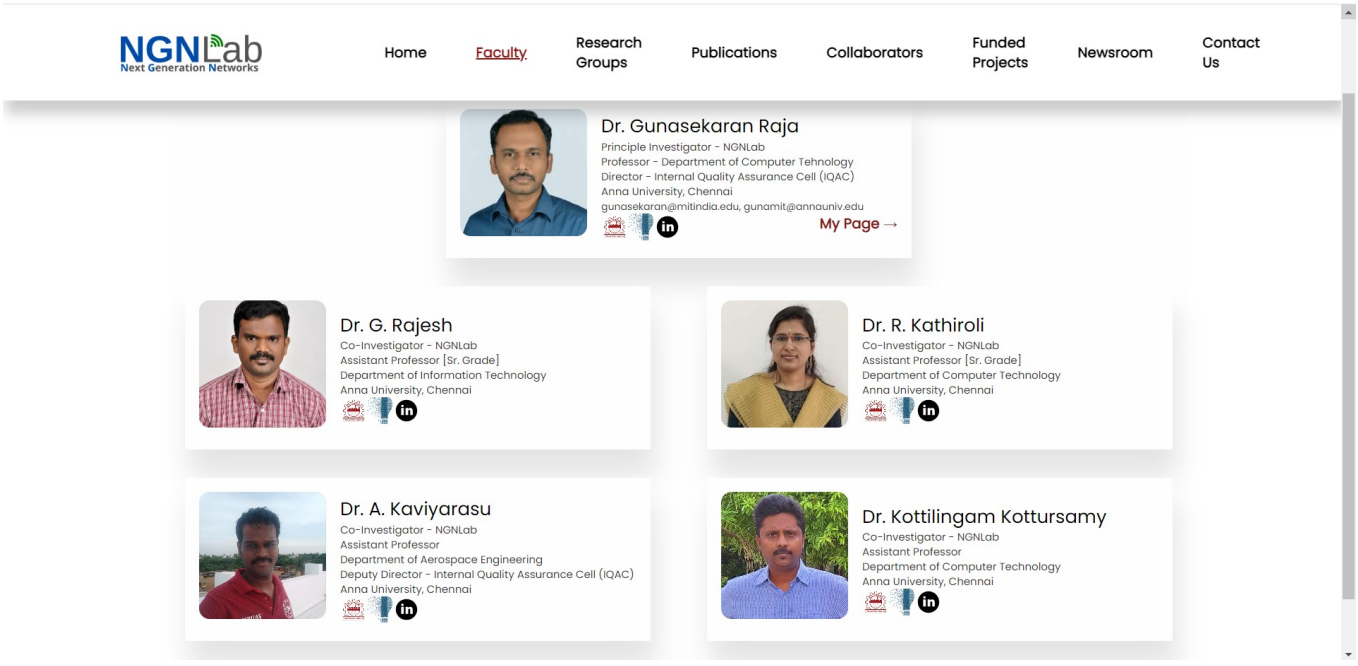
FACULTY PAGE

Purpose of the Faculty page:

The Faculty page focuses on the staff advisors who provide guidance and support to NGNLab. It provides information about their role in supporting the activities, initiatives, and members. Dr Gunasekaran Raja has a dedicated page where you may learn more about his skills, research interests, and contributions to the subject of networking. You can learn more about his work and accomplishments by exploring his page. Dr G. Rajesh, Dr R. Kathiroli, Dr A. Kaviyarasu, and Dr Kottilingam Kottursamy, our co-investigators have their profile with full information about their areas of specialization, research initiatives, and publications. We can learn more about each co- investigator's professional background by visiting their pages on the College website, LinkedIn accounts, and IRINS (Indian Research Information Network System) through the links provided.

FACULTY PAGE SCREENSHOTS

FACULTY CARDS



RESEARCH GROUPS PAGE

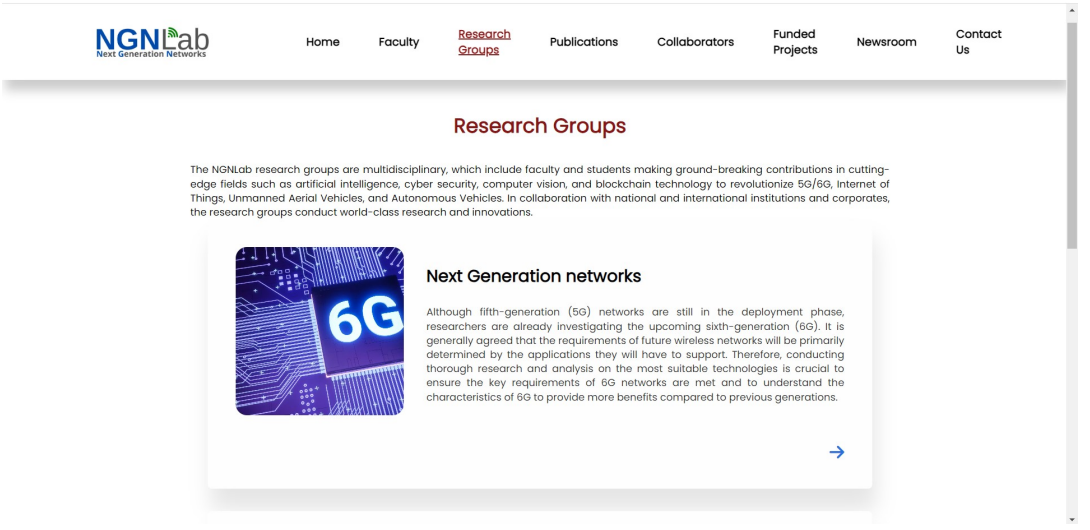
Purpose of the Research Groups page:

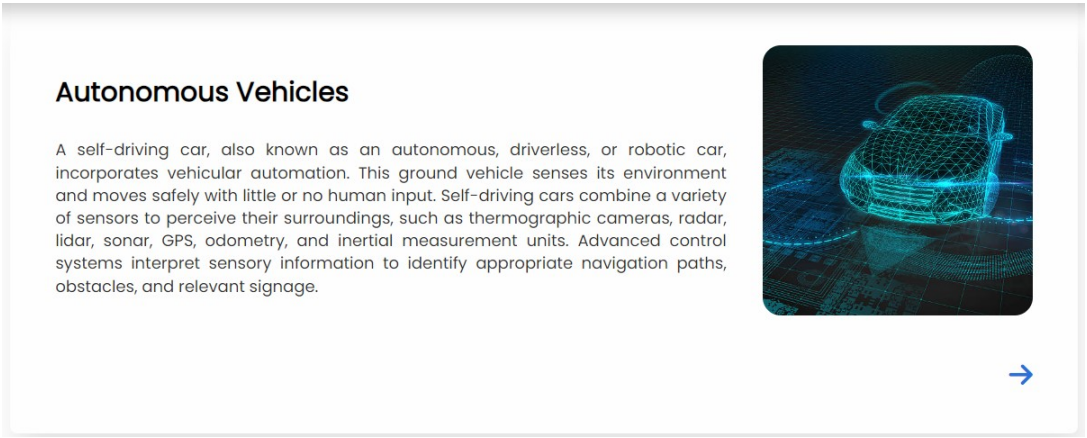
The purpose of the Research Groups page on the website is to provide information about the various research groups within NGNLab. This page highlights the different areas of research being conducted. It provides an overview of the research areas with description and information about the present researchers and alumni of each research area.

List of research groups within NGNLab:

1. Next Generation Networks
2. Autonomous Vehicles
3. Unmanned Aerial Vehicles

RESEARCH GROUPS PAGE SCREENSHOTS





Unmanned Aerial Vehicles

An Unmanned Aerial Vehicle (UAV), commonly known as a drone, is an aircraft without any human pilot, crew, or passengers on board. UAVs are a component of an Unmanned Aircraft System (UAS), which includes adding a ground-based controller and a system of communications with the UAV. The flight of UAVs may operate under remote control by a human operator, as Remotely-Piloted Aircraft (RPA), or with various degrees of autonomy, such as autopilot assistance, up to fully autonomous aircraft that have no provision for human intervention.

1. NEXT-GENERATION NETWORKS:

Description

The main application areas for the enhanced capabilities of 5G are Enhanced Mobile Broadband (eMBB), Ultra Reliable Low Latency Communications (URLLC), and Massive Machine Type Communications (mMTC).The use cases for 5G and 6G technology include revolutionary developments such as industry 5.0, augmented reality, autonomous transportation, eHealth, smart agriculture, digital twins, cobots, and robot navigation under three broad scenarios: the Internet of Senses, connected intelligent machines, and a connected sustainable world. The research focus of this group is mainly on 5G & 6G communications, Software Defined Networking, Artificial Intelligence, Blockchain, Cybersecurity, and IMoT.

NEXT GENERATION NETWORKS PAGE SCREENSHOTS

NGNLab Next Generation Networks

Home | Faculty | Research Groups | Publications | Collaborators | Funded Projects | Newsroom | Contact Us

Next Generation Networks

About

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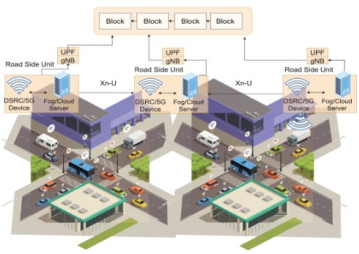
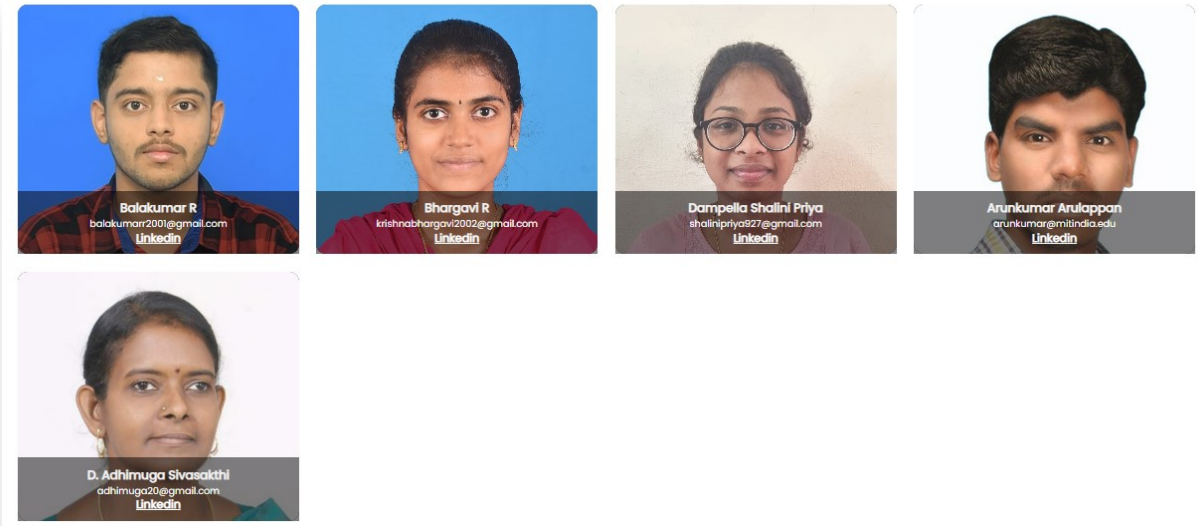


People

Present



Alumni

Research Topics:

- AI-empowered Trajectory Anomaly Detection and Classification in 6G-V2X
- A Quantum Safe Key Hierarchy and Dynamic Security Association for LTE/SAE in 5G Scenario
- SDN-Assisted Learning Approach for Data Offloading in 5G HetNets
- Energy-Efficient End-to-End Security for Software-Defined Vehicular Networks
- SDN-Assisted Disaster Management Framework
- SDN-Assisted LTE-WiFi Aggregation Mechanism
- Intelligent Spectrum Sharing and QoS Provisioning Schemes
- AI-Enabled Sharded Blockchain for Modernizing Land Registry System
- Blockchain Framework for Secure and Automated Supply Chain Management for SMEs
- SAFER: Crowdsourcing-based Disaster Monitoring System using Software-Defined Fog Computing
- FINDER: A D2D-based Critical Communications Framework for Disaster Management in 5G
- A Console GRID leveraged Authentication and Key Agreement Mechanism for LTE/SAE
- Authentication model for next-generation LTE and its dependent public safety networks
- Database Synchronization Mechanism for Mobile Data using SDN Control
- Novel Key Management Scheme to Minimize Handoff Latency in IEEE 802.16m Networks
- Efficient Algorithms to solve Broadcast Scheduling Problems in WiMAX mesh networks
- Adaptive/Intelligent Selfish Misbehavior Handling in Mobile Ad Hoc Network

STUDENTS:

Name	Domain Worked	Domain	Email	Batch	Current Position	Year	Position
Balakumar R	Networks	Healthcare	balakumarr2001@gmail.com	2019-2023	UG Research Assistant	present	
Bhargavi R	Networks	Healthcare	krishnabhargavi2002@gmail.com	2019-2023	UG Research Assistant	present	
Dampella Shalini Priya	Networks	Healthcare	shalinipriya927@gmail.com	2019-2023	UG Research Assistant	present	
Arunkumar Arulappan	Networks	Networks	arunkumar@mitindia.edu	2016-2022	PhD Research Scholar	present	
D. Adhimuga Sivasakthi	Networks	Networks	adhimuga20@gmail.com	2016-2023	PhD Research Scholar	present	
Dr B. Sheeba	Networks	LTE - Advanced Security	sheebasinto@gmail.com	2013-2016	Research Scholar	alumni	Lenovo-Germany
Dr. Kottilingam Kottursamy	Networks	Wireless Networks	lingamkosamy@gmail.com	2012-2017	Research Scholar	alumni	MIT-Anna University
Dr. J. Ramkumar	Networks	Broadband Wireless Networks	ram.kumar537@gmail.com	2012-2018	Research Scholar	alumni	SRM-Chennai
Dr. Rajakumar Arul	Networks	Wireless Security	rajakumar.arul@vit.ac.in	2013-2020	Research Scholar	alumni	VIT-Chennai
Dr Anil Thomas	Networks	Wireless Networks	theanilthomas@gmail.com	2016-2020	Research Scholar	alumni	Mount Zion - Kerala
Sudharsan	Networks	5G	sudhar86	2007-	Researc	alumni	Arrcus Inc,

Rajagopalan		networks	@hotmail.com	2008	h Person		San Jose CA
Alkondan C	Networks	5G networks	balaji.alk007@gmail.com	2013-2017	Research Intern	alumni	Microsoft
Priyanka D	Networks	Networks	riyankasekard2511@gmail.com	2019-2020	Research Intern	alumni	PhD in Anna University

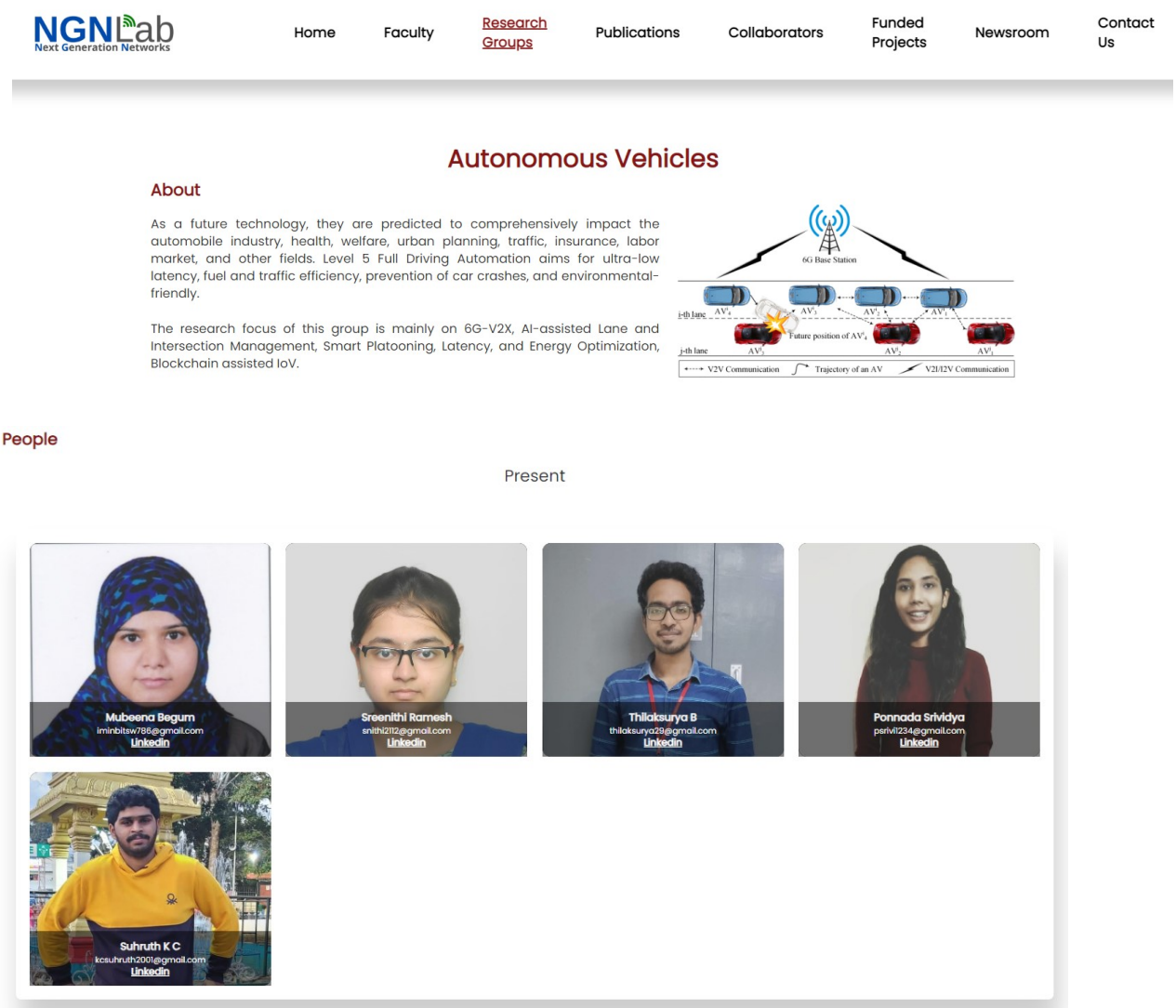
2. AUTONOMOUS VEHICLES:

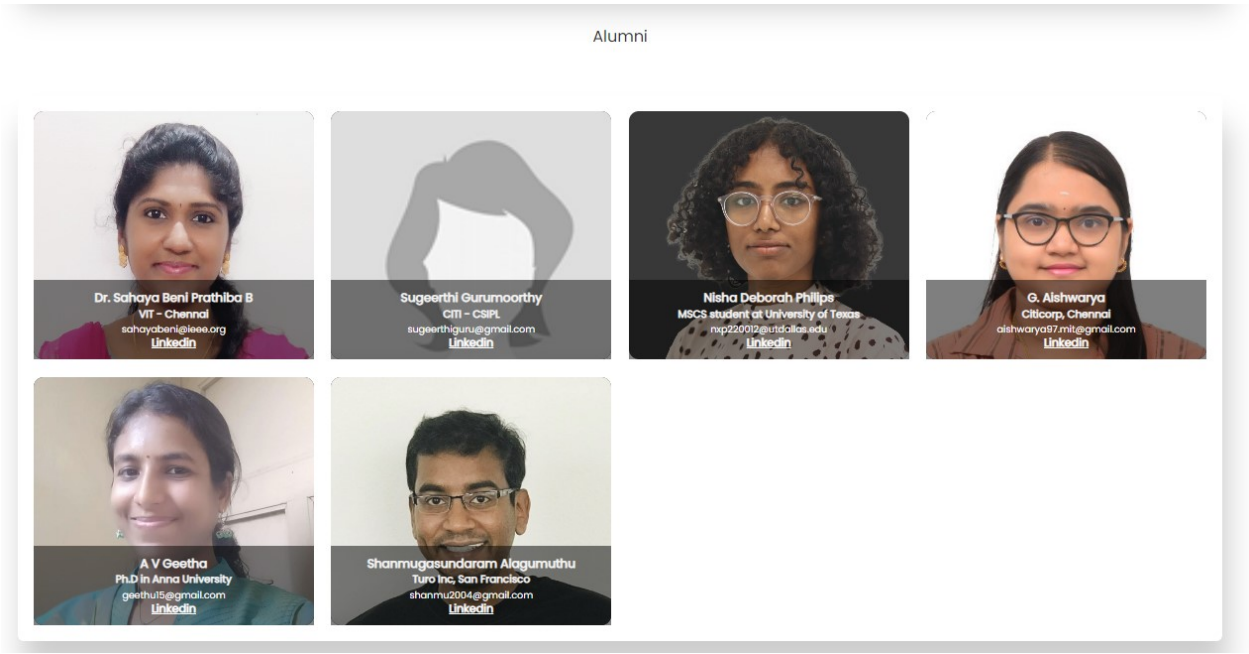
Description:

As a future technology, they are predicted to comprehensively impact the automobile industry, health, welfare, urban planning, traffic, insurance, labour market, and other fields. Level 5 Full Driving Automation aims for ultra-low latency, fuel and traffic efficiency, prevention of car crashes, and environmental-friendly.

The research focus of this group is mainly on 6G-V2X, AI-assisted Lane and Intersection Management, Smart Platooning, Latency, and Energy Optimization, Blockchain assisted IoV.

AUTONOMOUS VEHICLES PAGE SCREENSHOTS





RESEARCH TOPICS:

- Intuitive and Privacy-Preserving Traffic Light Control System
- AI-based Sensor Attack Detection and Classification
- Cybertwin-driven Federated Learning based Personalized Service Provision
- Safety Message Dissemination Framework
- AI-Powered Blockchain Security Solutions
- Secured Cooperative Adaptive Cruise Control
- Intelligent Intrusion Detection System
- Intelligent and Secured RSU Placement Mechanism
- Lane Detection and Departure Warning System
- SPAS: Smart Pothole-Avoidance Strategy
- Federated Learning Empowered Computation Offloading and Resource Management
- Adaptive Network Traffic Management System
- Smart Navigation and Energy Management Framework
- Smart-Platooning
- Intelligent Overtaking and Lane Changing Mechanisms
- Connected Intersection Management
- Audio Video Cognitive Processing System

STUDENTS:

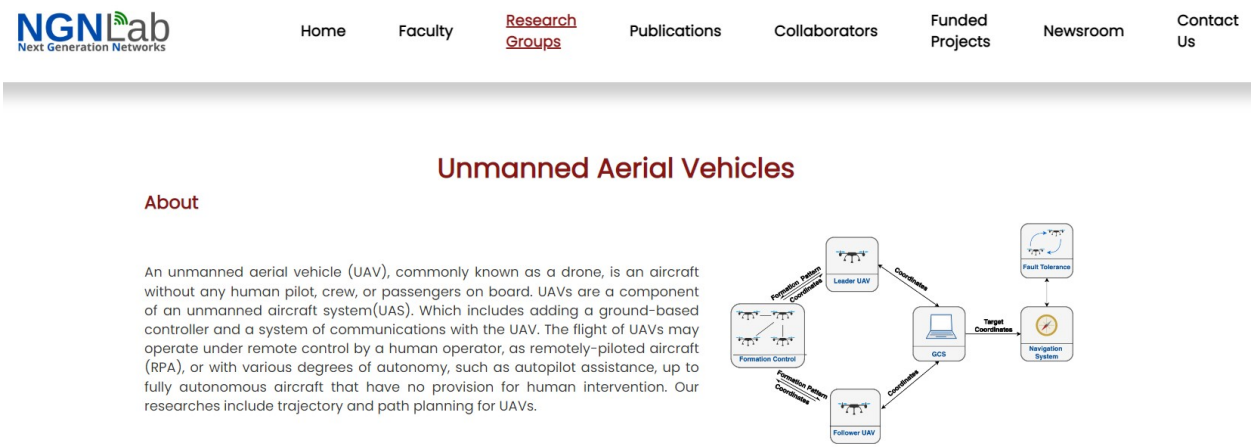
Name	Domain worked	Domain	Email	Batch	Current Position	Year	Position
Mubeena Begum	AV	AV	iminbitsw786@gmail.com	2019-2023	PhD Research Scholar	present	
Sreenithi Ramesh	AV	AV	snithi2112@gmail.com	2022-2023	Research Assistant -PG	present	
Thilaksurya B	AV	AV	thilaksurya29@gmail.com	2019-2023	Research Assistant -UG	present	
Ponnada Srividya	AV	AV	psrivi1234@gmail.com	2019-2023	Research Assistant -UG	present	
Suhruth K C	AV	AV	kcsuhruth2001@gmail.com	2019-2023	Research Assistant -UG	present	
Dr. Sahaya Beni Prathiba B	AV	AV	sahayabeni@ieee.org	2017-2022	Research Scholar	alumni	VIT - Chennai
Sugeerthi Gurumoorthy	AV	AV	sugeerthiguru@gmail.com	2020-2022	Research Assistant -PG	alumni	CITI - CSIPL
Nisha Deborah Philips	AV	AV | UAV	nxp220012@utdallas.edu	2019-2021	Research Intern	alumni	MSCS student at the University of Texas

3. UNMANNED AERIAL VEHICLES:

Description:

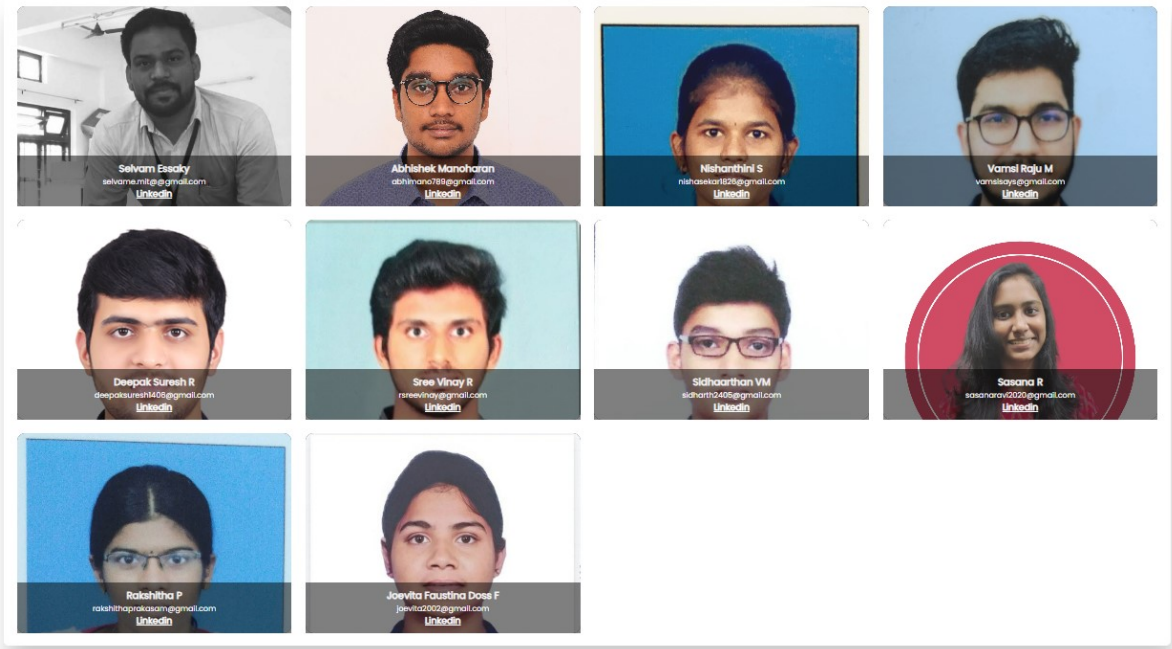
An unmanned aerial vehicle (UAV), commonly known as a drone, is an aircraft without any human pilot, crew, or passengers on board. UAVs are a component of an unmanned aircraft system(UAS). Which includes adding a ground-based controller and a system of communications with the UAV. The flight of UAVs may operate under remote control by a human operator, as remotely-piloted aircraft (RPA), or with various degrees of autonomy, such as autopilot assistance, up to fully autonomous aircraft that have no provision for human intervention. Our research includes trajectory and path planning for UAVs.

UNMANNED AERIAL VEHICLES PAGE SCREENSHOTS



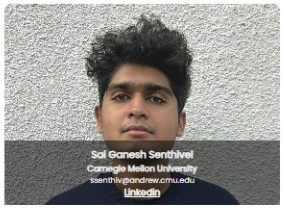
People

Present



Visiting Scholars

Alumni



STUDENTS:

Name	Domain Worked	Domain	Email	Batch	Current Position	Year	Position
Selvam Essaky	UAV	UAV, AV, Blockchain	selvame.mit@@gmail.com	2021-present	PhD Research Scholar	present	
Abhishek Manoharan	UAV	UAV, Blockchain	abhimano789@gmail.com	2019-2023	Research Assistant-UG	present	
Nishanthini S	UAV	UAV, Blockchain	nishasekar1826@gmail.com	2019-2023	Research Assistant-UG	present	
Vamsi Raju M	UAV	UAV, Blockchain	vamsisays@gmail.com	2019-2023	Research Assistant-UG	present	
Deepak Suresh R	UAV	UAV, Blockchain	deepaksuresh1406@gmail.com	2020-2024	Research Assistant-UG	present	
Sree Vinay R	UAV	UAV, Blockchain	rsreevinay@gmail.com	2020-2024	Research Assistant-UG	present	
Sidhaarthan VM	UAV	UAV	sidharth2405@gmail.com	2020-2024	Research Assistant-UG	present	
Sasana R	UAV	UAV	sasanaravi2020@gmail.com	2020-2024	Research Assistant-UG	present	
Rakshitha P	UAV	UAV	rakshithaprakasam@gmail.com	2020-2024	Research Assistant-UG	present	
Joevita Faustina Doss F	UAV	UAV	joevita2002@gmail.com	2020-2024	Research Assistant-UG	present	
Sai Ganesh Senthivel	UAV	UAV, Blockchain	ssenthiv@andrew.cmu.edu	2018-2022	Security Research Intern	alumni	Carnegie Mellon University

Praveen Kumar Selvam	UAV	UAV	praveen.Selvam@dlr.de	2020-2021	Research Assistant-PG	Visiting scholar	German Aerospace Center (DLR)

RESEARCH TOPICS:

- Multi-Layered Blockchain-assisted Internet of Drones ecosystem
- Efficient and Secured Swarm Pattern Multi-UAV Communication
- Post Disaster 3D-Scene Reconstruction for Efficient Survivor Detection
- Intelligent and Energy-Efficient UAV Deployments
- AI-empowered Trajectory Optimization in 6G Aerial Networks
- 6G-Assisted UAV-Truck Networks: Towards Efficient Essential Services Delivery
- TVUB: Thermal Vision-based UAV and Blockchain-aided Poaching Prevention System
- Nexus of 6G and Blockchain for Authentication of Aerial and IoT Devices
- Universal Traffic Management and Digital Sky for Drones
- Multi-UAVs Cooperative Payload Management
- Collisionless Pattern Formation and Path Planning
- Intelligent Localization and Mapping Systems for Safety Relief Operations
- Adaptive Indoor Navigation Framework and Warehouse Management
- Authorized Arming and Safeguarded Landing
- UAV Applications for Smart Farming
- Emergency Evacuation Framework by CAVs and UAVs
- Intelligent Joint Delivery system by CAVs and UAVs

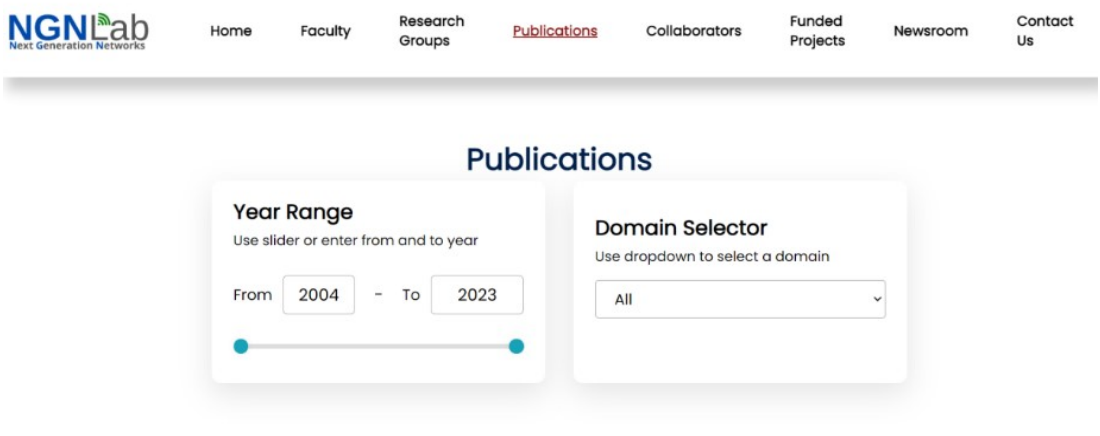
PUBLICATIONS PAGE

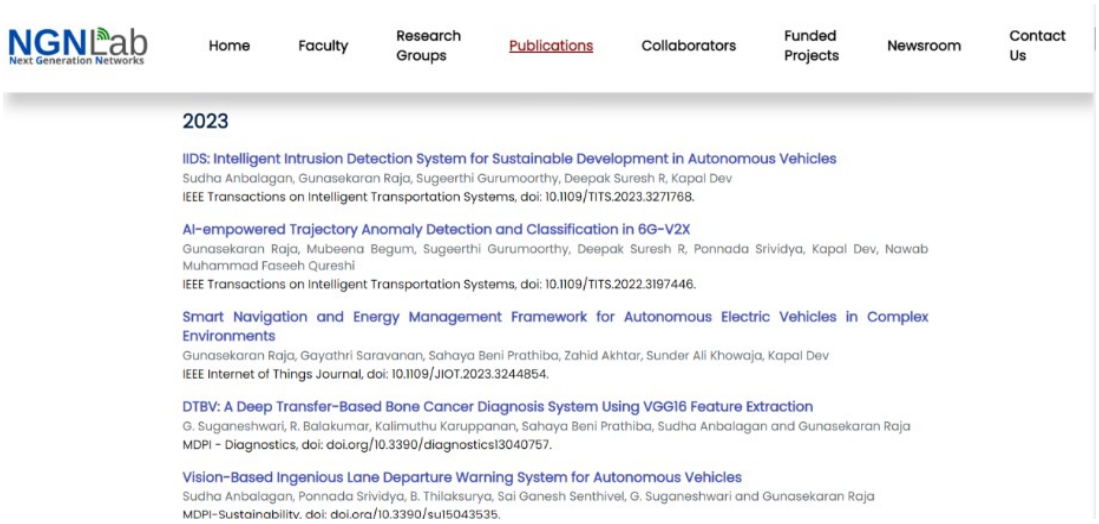
Purpose of the Publications page:

The purpose of the publications page is to showcase the list of works that the members of the NGNLab have published. It displays the publications yearwise along with the title and the authors. Year range slider and domain wise filtering are provided for easier retrieval of required publications.

PUBLICATIONS PAGE SCREENSHOTS

SEARCH OPTION TO FIND PUBLISHED PAPERS IN PUBLICATIONS





Click Here for Publications:

Publications

COLLABORATORS PAGE

Purpose of the Collaborators page:

The purpose of the Collaborators page is to acknowledge and highlight various institutions across the globe that have collaborated with NGNLab for various projects, initiatives, and creative work.

Content of the Collaborators page:

USA:

- University of California Davis, USA
- Carnegie Mellon University, USA
- University of Texas, Dallas, USA
- Salk Institute of Biological Studies, USA
- University of Mary Washington, USA
- University of South Florida, USA
- State University of New York Polytechnic Institute, USA

UK:

- Manchester Metropolitan University, UK
- Brunel University, UK

IRELAND:

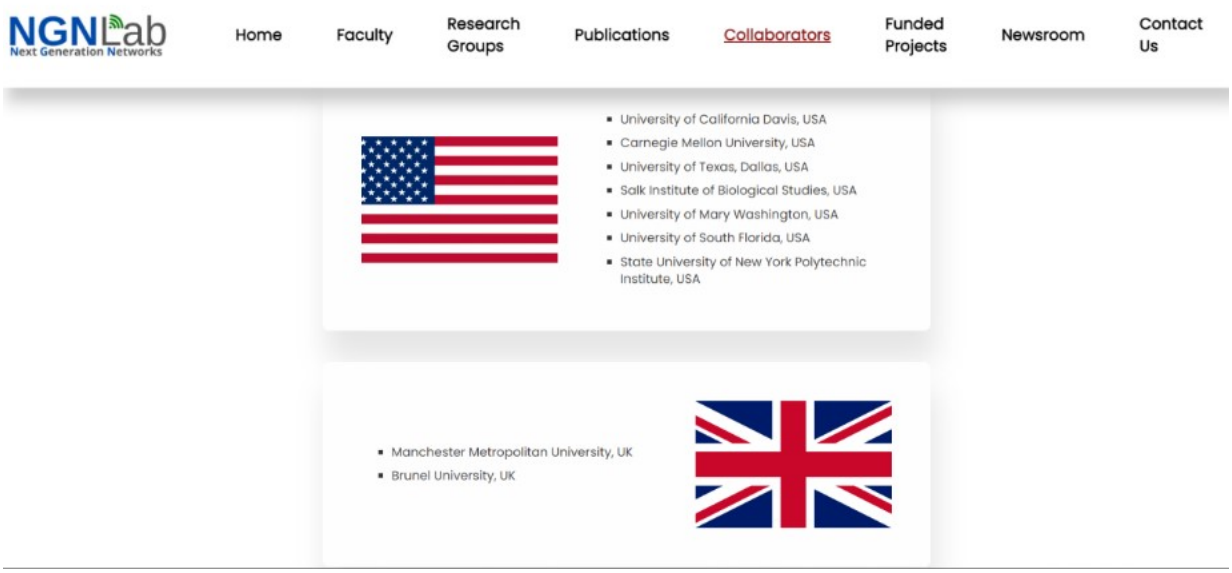
- Trinity College Dublin, Ireland
- Munster Technological University, Ireland

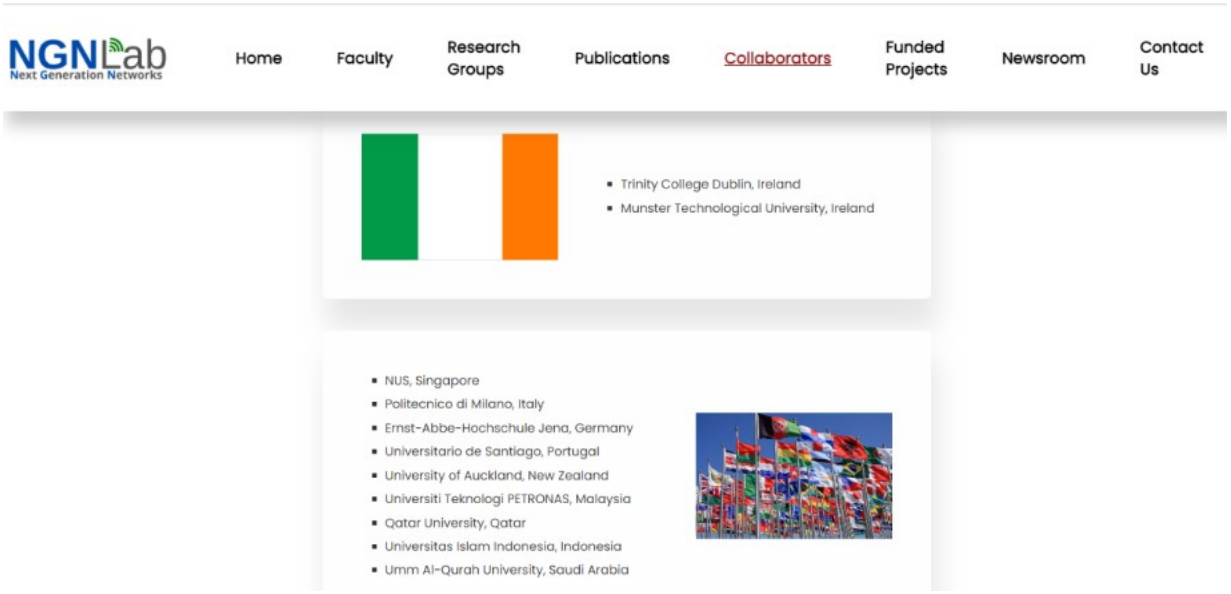
OTHERS:

- NUS, Singapore
- Politecnico di Milano, Italy
- Ernst-Abbe-Hochschule Jena, Germany
- Universitario de Santiago, Portugal
- University of Auckland, New Zealand
- Universiti Teknologi PETRONAS, Malaysia
- Qatar University, Qatar
- Universitas Islam Indonesia, Indonesia
- Umm Al-Qurah University, Saudi Arabia

COLLABORATORS PAGE SCREENSHOTS

COUNTRY-WISE CARDS FOR COLLABORATORS





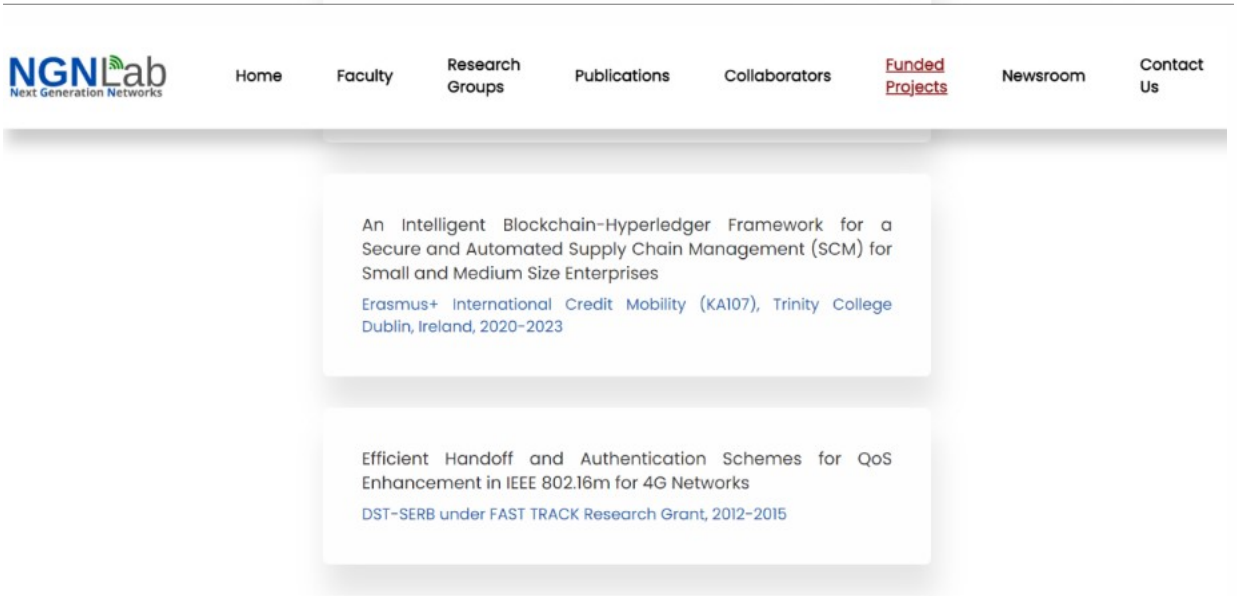
FUNDED PROJECTS PAGE (SELECTIVE)

Purpose of the Funded Projects page:

The purpose of the Funded Projects page is to provide information and details about projects that have received funding from external sources.

FUNDED PROJECTS PAGE SCREENSHOTS

CARDS FOR EACH FUNDED PROJECT WITH DETAIL



FUNDED PROJECTS

- Wearable Digital Health Care Device for Real-time Monitoring of Cardio-toxicity

  SERB – State University Research Excellence (SURE), Department of Science and Technology, 2023-2026

- FlyCamXR - Autonomous Camera Drones for Interactive Experiences in Extended Reality Telepresence Applications with Enhanced Naturalness

  DAAD Indo-German Research Collaboration - University of Applied Sciences Jena, Germany, 2022-2024

- An Intelligent Blockchain-Hyperledger Framework for a Secure and Automated Supply Chain Management (SCM) for Small and Medium Size Enterprises

  Erasmus+ International Credit Mobility (KA107), Trinity College Dublin, Ireland, 2020-2023

- Efficient Handoff and Authentication Schemes for QoS Enhancement in IEEE 802.16m for 4G Networks

  DST-SERB under FAST TRACK Research Grant, 2012-2015

- Efficient Resource Utilization by solving Scheduling Problems in WiMAX networks

  Research Support Scheme for Innovative Project by Young Faculty Members, 2009-2010

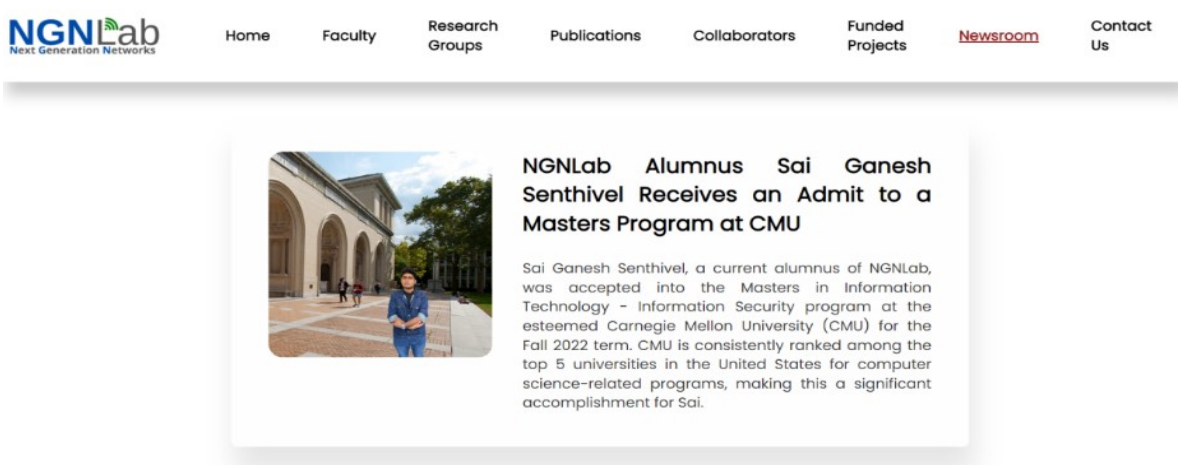
NEWSROOM PAGE

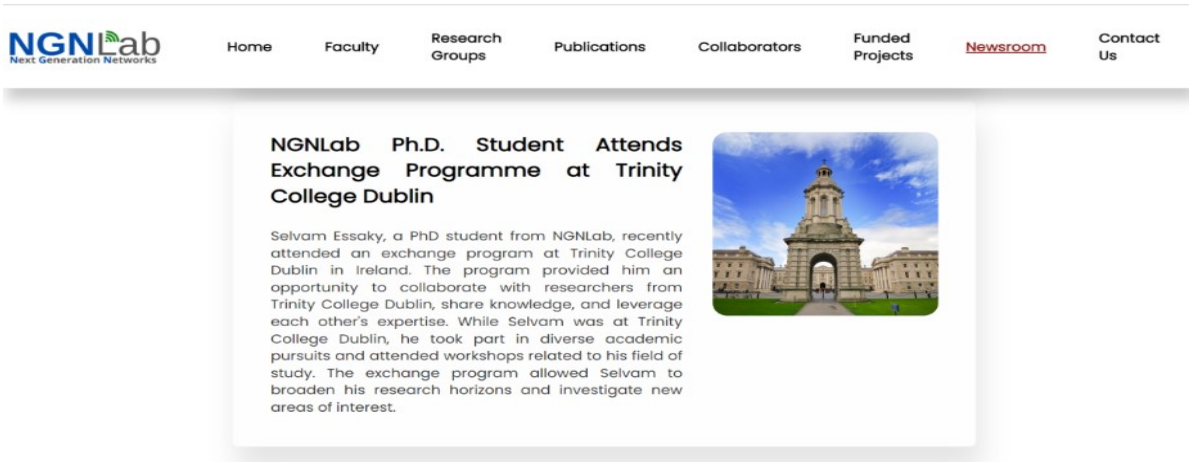
Purpose of the Newsroom page:

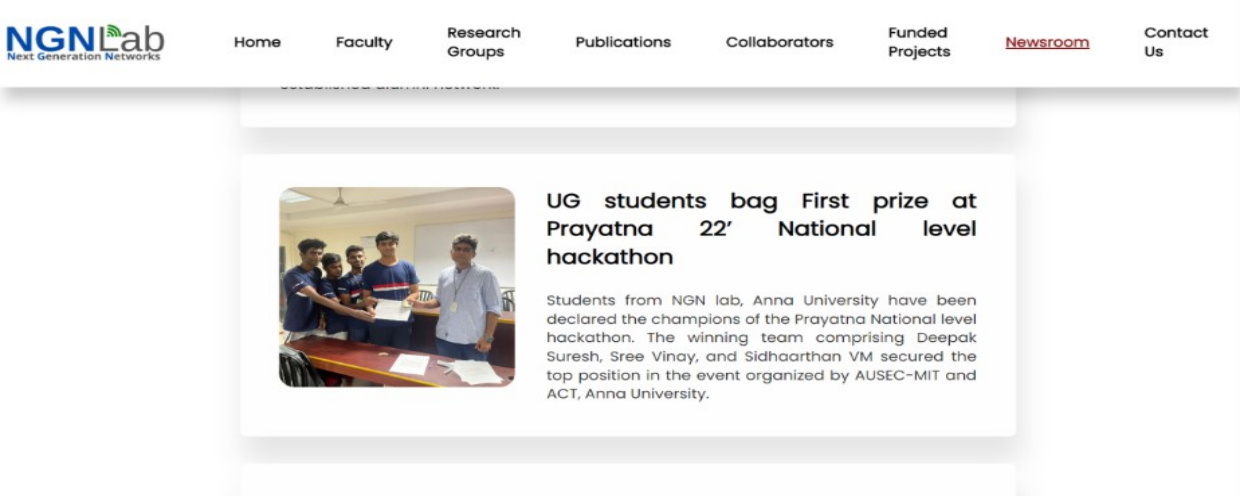
The purpose of the Newsroom page is to provide a central hub for news and media-related content about the prowess and endeavours of the NGNLab members. The Newsroom offers a venue for NGNLab members to discuss important news, research breakthroughs, and notable awards received.

NEWSROOM PAGE SCREENSHOTS

NEWS INFORMATION RELATED TO NGN







Content of the Newsroom page:

NGNLab Alumnus Sai Ganesh Senthivel Receives an Admit to a Masters Program at CMU

Sai Ganesh Senthivel, a current alumnus of NGNLab, was accepted into the Masters in Information Technology - Information Security program at the esteemed Carnegie Mellon University (CMU) for the Fall 2022 term. CMU is consistently ranked among the top 5 universities in the United States for computer science-related programs, making this a significant accomplishment for Sai.

NGNLab PhD. Student Attends Exchange Programme at Trinity College Dublin

Selvam Essaky, a PhD student from NGNLab, recently attended an exchange program at Trinity College Dublin in Ireland. The program provided him with an opportunity to collaborate with researchers from Trinity College Dublin, share knowledge, and leverage each other's expertise. While Selvam was at Trinity College Dublin, he took part in diverse academic pursuits and attended workshops related to his field of study. The exchange program allowed Selvam to broaden his research horizons and investigate new areas of interest.

NGNLab UG Students Receive Admits into Master's Programs at US Universities

Abhishek and Srividya have been accepted into graduate programs at two prestigious universities in the United States. Abhishek has been accepted into the University of Southern California (USC), while Srividya has been accepted into the University of Maryland, College Park (UMCP). USC and UMCP are renowned for their high-quality education and immense research opportunities. Their acceptance reflects their hard work, dedication, and research potential.

NGN Students Secure High-Paying Jobs with Top Companies

NGNLab's undergraduate students have secured placements in leading companies with lucrative compensation packages. Thilaksurya was hired by Wells Fargo, while Balakumar was recruited by Tekion Corp. During the campus placement season, businesses from different industries, such as IT, manufacturing, and consulting, displayed a strong interest in hiring NGNLab students. The lab attributes the successful placements of its students to its strong academic programs, industry partnerships, and well-established alumni network.

UG students bag First prize at Prayatna 22’ National level hackathon

Students from NGN lab, Anna University have been declared the champions of the Prayatna National level hackathon. The winning team comprising Deepak Suresh, Sree Vinay, and Sidhaarthan VM secured the top position in the event organized by AUSEC-MIT and ACT, Anna University.

Final Year Members of NGNLab Participate in a Six-Month Work-Based Learning Internship at ERNET India

Four final-year undergraduates from NGNlab, namely Srividya, Nishanthini, Sakthi, and Jagadeesh, have completed a six-month Work-Based Learning Research Internship at Education and Research Network (ERNET), IITM Research Park in Chennai, India. During the internship, the students gained valuable insights into Time Sensitive Networking and its implementation on Linux. They also worked on various individual projects covering domains like Blockchain,

Natural Language Processing, and Data Analytics. The internship at ERNET India allowed the students to apply their theoretical knowledge in a practical setting, preparing them for a successful career ahead.

CONTACT US PAGE

Purpose of the Contact Us page:

The Contact Us page is a vital component of a website that facilitates communication and interaction between visitors and the NGNLab. It includes information about the web team of NGNLab.

Content of Contact Us Page:

202 NGNLab

Charles Babbage Block

Department of Computer Technology

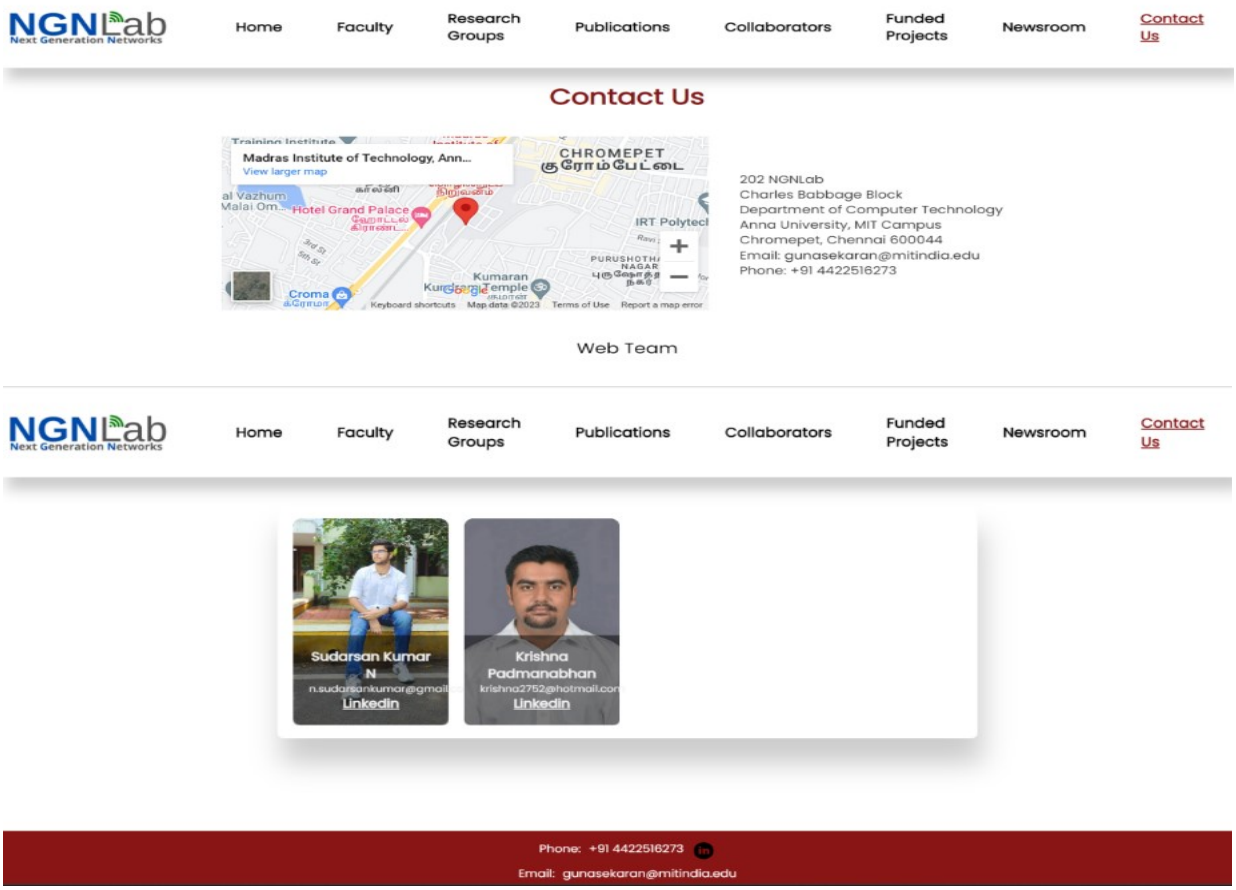
Anna University, MIT Campus

Chromepet, Chennai 600044

Email: gunasekaran@mitindia.edu

Phone: +91 4422516273

CONTACT US PAGE SCREENSHOTS



STUDENTS:

name	Domain Worked	mail	batch	Current Position	year
Sudarsan Kumar N	Web-Team	n.sudarsankumar@gmail.com	UG: 2019-2023	CITI | CSIPL	others
Krishna Padmanabhan	Web-Team	krishna2752@hotmail.com	UG: 2019-2023	Accenture	others

OVERVIEW OF STRUCTURE:

The GitHub repository structure consists of various directories and files. In the root directory, there is a folder named ".vscode" which likely holds settings and configurations specific to the Visual Studio Code (VSCode) editor. The "assets" directory contains media files such as images and videos used in the project. The "data" directory stores data files or datasets utilized in the project. The "people" directory likely contains information about individuals involved in the project, such as team members and collaborators. Javascript files are stored in the "scripts" directory, while style-related files like CSS can be found in the "styles" directory.

The "CNAME" file is used to associate a custom domain name with a GitHub Pages site. There are several HTML files representing different web pages within the project, such as "av.html" for audiovisual content, "blockchain.html" for blockchain-related topics, "faculty.html" providing information about project faculty, "index.html" serving as the main landing page, and others like "contactus.html," "funded_projects.html," and "publications.html" dedicated to contact information, funded projects, and publications, respectively. The four Json files such as fundedProjects.json, publications.json, newsRoom, JSON and student.json are present within the data folder.

Steps to follow to add / update data:

1. Set up Git Desktop:
   Install Git Desktop on your computer.
   Configure your Git identity (name and email) in Git Desktop.
   Clone the repository:

2. Open Git Desktop.
   Click on the "Clone a Repository" or "Clone" button.
   Enter the repository URL and choose the destination folder.
   Click on "Clone" to create a local copy of the repository.
   Fetch changes from origin.

3. Open Git Desktop.
   Select the repository you cloned in the previous step.
   Click on "Fetch" or "Fetch origin" to download the latest changes from the remote repository.
   Pull changes from origin:

4. Open Git Desktop.
   Select the repository you cloned.
   Click on "Pull" or "Pull origin" to merge the latest changes from the remote repository into your local branch.
   Open the repository in VSCode:

5. Open VSCode.
   Click on "Open Folder" or "Open" and select the folder where you cloned the repository.
   Make changes in a particular JSON file:
   Navigate to the JSON file you want to modify within VSCode.
   Make the necessary changes to the file.

6. Save the file:
   Press Ctrl+S or choose "Save" from the File menu to save the changes.
   Commit changes to the main branch.

7. Switch back to Git Desktop.
   Review the changes you made in the file.
   Enter a commit message describing your changes.
   Select the main branch (or any other appropriate branch) as the target branch for your commit.
   Click on "Commit" or "Commit to main" to create a new commit with your changes.
8. Push changes to origin:
   Open Git Desktop.
   Click on "Push" or "Push origin" to upload your local commits to the remote repository.

To add or update data:

- For funded projects add the information in json format under data/fundedProjects.json.

  json code format:

```
[
  {
    "title": "FlyCamXR - Autonomous Camera Drones for Interactive Experiences in Extended Reality Telepresence Applications with Enhanced Naturalness",
    "agency": "DAAD Indo-German Research Collaboration - University of Applied Sciences Jena, Germany, 2022-2024"
  },
]
```

- For publications add the information in json format under data/publications.json.

  json code format:

```
[
  {
    "title": "IIDS: Intelligent Intrusion Detection System for Sustainable Development in Autonomous Vehicles",
    "author": "Sudha Anbalagan, Gunasekaran Raja, Sugeerthi Gurumoorthy, Deepak Suresh R, Kapal Dev",
```

```
    "conference": "IEEE Transactions on Intelligent Transportation Systems, doi: 10.1109/TITS.2023.3271768.",
    "doi": "#",
    "year": "2023",
    "domain": ["AV"],
    "selective": true
  },
]
```

- For newsRoom add the information in json format under data/newsRoom.json.

  Json code format:

```
[
  {
    "img": "./assets/img/Sai-CMU.png",
    "title": "NGNLab Alumnus Sai Ganesh Senthivel Receives an Admit to a Masters Program at CMU",
    "about": "Sai Ganesh Senthivel, a current alumnus of NGNLab, was accepted into the Masters in Information Technology - Information Security program at the esteemed Carnegie Mellon University (CMU) for the Fall 2022 term. CMU is consistently ranked among the top 5 universities in the United States for computer science-related programs, making this a significant accomplishment for Sai."
  },
]
```

- For students/faculty/alumni add the information in json format under data/student.json.

  json code format:

```
[
  {
    "img": "./assets/img/people/balakumar.jpg",
    "name": "Balakumar R",
    "domainWorked": "Networks",
    "domain": "Healthcare",
    "facebook": "#",
    "twitter": "#",
    "linkedin": "https://www.linkedin.com/in/balakumarr15/",
    "mail": "balakumarr2001@gmail.com",
    "batch": "2019-2023",
    "currentPosition": "UG Research Assistant",
    "year": "present"
  },
]
```