



# Suganthan Prabhu

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## PERSONAL PROFILE

Enthusiastic student with a profound interest in control systems, space technology, and embedded systems. Currently engaged in active participation within renewable energy projects, emphasizing innovative solutions. Committed to leveraging skills in sustainable technologies to generate a positive influence. Actively seeking opportunities in the dynamic domains of space technology and embedded systems to contribute meaningfully.

## EDUCATION

**Kumaraguru college of Technology, Anna University** **2022-2026**

*B.E Electronics and communication Engineering (currently in 7<sup>th</sup> semester)*

CGPA: 8.4 (Till 5<sup>th</sup> Semester)

**Rasi Matric Hr. Sec School, Tamil Nadu State Board of Education** **2010 -2022**

*Mathematics, Biology*

Grade: 10<sup>th</sup> - 99%, 12<sup>th</sup> – 97%

## HONORS AND AWARDS

1. [Runner of Student Presentation Competition](#) in International Workshop on Ocean Engineering 2023 - IIT, Madras.
2. [Bronze medal - International Inter Varsity Innovation](#) Challenge 2023, for developing an innovative vacuum-based energy storage solution.
3. [Mahatma Gandhi Merit Scholarship 2023](#), awarded for academic excellence in the academic year 2022–2023.
4. [Mahatma Gandhi Merit Scholarship 2024](#), awarded for academic excellence in the academic year 2023–2024.
5. [Mahatma Gandhi Merit Scholarship 2025](#), awarded for academic excellence in the academic year 2024–2025.
6. [Recognition award 2025](#), awarded for Academic and Cocurricular excellence in the academic year 2023–2025.
7. [Finalist of WEPOWER Track](#), IEEE YESIST12 2024 – "Vacuum Energy Storage System."
8. [Semifinalist of Vishwakarma Award](#) for Engineering Innovation 2024 – "Active Solar Panel Cooling" 2024.
9. [Recognition award 2025](#) from Dept of ECE, KCT for Research and Innovation.
10. [Visvesvaraya Award](#) for Technological Excellence in RiG for the year 2024-2025.

## CERTIFICATIONS

1. Control Systems – [NPTEL \(Jul – Oct 2023\)](#)
2. MATLAB Numerical Computation – [Udemy \(Jan 2024\)](#)
3. Introduction to internet of things – [NPTEL \(Jan – April 2024\)](#)
4. Machine Learning with Python – [Coursera 2024](#)
5. Geo- data Sharing Cyber Security – [IIRS 2025](#)
6. Embedded systems – [NIELIT Jan2025](#)

## EXPERIENCE

1. **Kinowave – Research Intern** **2024**  
Worked on renewable energy projects, contributing to control system design, automation, and SCADA integration.
2. **URSC (U R Rao Satellite Centre), ISRO – Project Intern** **2025**  
Currently working on the design, control algorithms, and sensor integration for a Hexapod Spider Robot for autonomous movement and obstacle navigation.

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## INSTITUTIONAL LEADERSHIP AND INVOLVEMENTS

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- 1. KCT Research Cell | *Lead & Research Intern – Energy Engineering,*** **2022 - Present**
  - Organized Ré Day, Kumaraguru Intra Ideathon 2023, and Yugam India Ideathon 2023 on the theme of Sustainability and Renewable Energy.
  - Contributed to Various projects aimed at Renewable Energy.
- 2. KCT IEEE Student Branch | *Member – Communication society,*** **2023 - 2024**
  - Involved in various Projects and research related activities for the betterment of science and technology.
- 3. Super60 | *Member*** **Dec 2024 – May 2025**
  - Actively participating in leadership initiatives, strategic discussions, and experiential learning to enhance my personal and professional growth.

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## PROJECTS

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- 1. Pneumatic-Based Solar Trackers** **Dec 2022 – May 2023**

Designed a cost-effective tracking system to enhance PV efficiency, comparing its performance with motor and hydraulic systems for solar power applications.
- 2. Plastic Incineration and Waste Management** **Jul 2023 – Oct 2023**

Gained insights into the efficiency and emissions profiles of different methods to optimize and scale up the incineration process.
- 3. Mooring-Less Wave Energy Platform** **Nov 2023 – Apr 2023**

Designed a mooring-less system to harness wave energy using Pascal's principle, enabling cost-effective power generation and desalination.
- 4. Vacuum-Based Energy Storage System** **May 2024 – Jul 2024**

Developed a vacuum-based energy storage system that efficiently stores excess renewable energy and releases it on demand.
- 5. PV Cooling System with Metal Chip-Based Thermal Regulation** **Jul 2024 – Feb 2025**

Circulating water behind solar panels reduces heat, improving efficiency, while the heated water can be reused for other purposes.
- 6. Optimizing Solar Power Plant Installation Using Machine Learning** **Mar 2025 – Present**

Developing a machine learning system to predict solar plant inefficiencies, estimate financial losses, and optimize configurations for maximum ROI.

For more details on projects - [Link](#)

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## TECHNICAL SKILLS

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- 1. Programming:** C, Python; basic knowledge of C++, VHDL, Verilog.
- 2. Tools:** MATLAB (simulation, modelling, numerical computation), PCB design, Cadence.
- 3. Core Skills:** Control system design, Embedded systems, Electrical circuit Design, Sensor Fusion, SCADA, SoC with Embedded processors, Analog Circuit Design, Data Structures.
- 4. Interests:** Embedded systems, Control systems, Space tech, Sustainability.

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## COMPETITIONS PARTICIPATED

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- [Participated in Start Up Showcase](#) event at 6<sup>th</sup> INAE SERB GITAM Youth conclave Nov 2023.
- [Presented a paper](#) titled “A Novel Approach Towards A Sustainable Energy Storage: Vacuum Based Energy Storage” at WEECON 2023.
- [Presented a paper](#) titled “Sensor Technologies in Industrial Incinerators – A Review ” at ic-ETITE 2024.
- Participated in [World Engineering Day Hackathon](#) 2024.
- Participated in [International Project Expo](#) 2024.
- Presented the project “[Smart Grid System](#)” at [Project Presentation 2.0](#) – TechCon.
- Presented the project “Mooring-Less Wave Energy Platform” at Student Presentation Competition in International Workshop on Ocean Engineering 2023 - IIT, Madras.
- Attended workshop on [PCB Design Techniques](#) – KCT Dec 2023.
- Participated in [Dec- Tech 2024](#) by IEEE ADSF SIGHT

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## RESEARCH GRANTS RECEIVED

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1. **Rs. 25,000** Research grant for Mathematical Model of Wave Energy Converter.
2. **Rs. 10,000** Research grant for Active Solar Panel Cooling from Vishwakarma Awards
3. **Rs. 49,000** Grant for Pneumatic-Based Solar Trackers from Research cell KCT.
4. **Rs. 27,000** Grant for Design and Analysis of an efficient cooling system for enhanced performance of PV modules

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## RESEARCH PUBLICATIONS AND SUBMISSIONS

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1. Sudalaimuthu Suresh P, Sivakeerthana S, Sriganesh S, **Suganthan P**, Mithun T N, Janarthanan Venkatachalam, Sreeharan B N. "A Novel Approach Towards Sustainable Energy Storage: Vacuum Based Energy Storage" - WEECON 2023. (Manuscript submitted)
2. **Suganthan P**, Archana A R, Sivakeerthana S, Sudalaimuthu Suresh P, Janarthanan Venkatachalam, Sreeharan B N. "Sensor Technologies in Industrial Incinerators - A Review" - ICETITE 2024
3. Krisnan K, Janarthanan Venkatachalam, **Suganthan P**, Sriganesh S, Sangeetha N. " Design and Analysis of Novel Cooling System for Photovoltaic Modules "- ASME 2025 Hyderabad.
4. Krisnan K, **Suganthan P**, Janarthanan Venkatachalam, Sangeetha N " Mathematical Modeling for an active Cooling system for Photovoltaic Modules" – ICSTEPS 2025.

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## VOLUNTEERING

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### 1. Student Coordinator - Kumaraguru Intra Ideathon 2023

As a student coordinator for the ideathon, I actively managed and assisted participants with their challenges throughout the event.

### 2. Event Coordinator - Yugam India Ideathon '23

As a student coordinator for the 48-hour ideathon, I played a pivotal role in facilitating and supporting participants from various colleges across Tamil Nadu.

3. Volunteered at the **59<sup>th</sup> Annual Meeting of the Association for Tropical Biology and Conservation**, held from July 2<sup>nd</sup>–6<sup>th</sup>, 2023 in Coimbatore, India.

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## REFERENCES

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### 1. Mr. Brathikan V M

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Kumaraguru College of Technology  
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### 2. Mrs. Gracia D

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