

**KARNATAKA STATE COUNCIL FOR SCIENCE AND TECHNOLOGY**

*Indian Institute of Science campus, Bengaluru*

Telephone: 080 -23600978, 23341652 || Email: spp@kscst.org.in

Website: www.kscst.org.in/spp.html or https://kscst.karnataka.gov.in/en

**FORMAT FOR STUDENT PROJECT PROPOSAL FOR THE**

**48th SERIES OF STUDENT PROJECT PROGRAMME**

(Handwritten proposals will not be accepted, please fill all the details in this MS word file, insert images / diagrams wherever necessary. Convert to pdf file, get it approved from the project guide / head of the department and principal of your institution. Keep ready the scanned pdf file of 1) Declaration and Endorsement 2) details of processing fees made and fill-up the Google Form.

<https://forms.gle/ks2WxWB4ei1hgv9D9>

|  | **Name of the College:ATRIA INSTITUTE OF TECHNOLOGY** |
| --- | --- |
|  | **Project Title: AI controlled touchless water dispenser** |
|  | **Branch: ELECTRONICS AND COMMUNICATION** |
|  | **Theme (as per KSCST poster):**  **Big Data, integrating Internet of Things, Artificial Intelligence, Data Engineering, Robotics (agriculture, health, education, digital literacy, assistive aid) (The project proposals shall mandatorily be from one of the broad themes / areas. Visit website www.kscst.org.in/spp.html)** |
|  | **Name(s) of project guide(s):**   1. **Name: Prof. RAKHI S**   **Email id: rakhi.s@atria.edu**  **Contact No.:9845466815**   1. **Name: Prof. BHASKAR M K**   **Email id: bhaskar.mk@atria.edu**  **Contact No.:9741594742** |
|  | **Name of Team Members (Strictly not more than four students in a batch):**  **Name: E A GOWRI USN No.:1AT21EC034**  **Email id: eagowri@gmail.com**  **Mobile No:7349259037**  **Name: LIKHITHA SWAMY**  **USN No.:1AT21EC063**  **Email id: likhithaswamyls@gmail.com**  **Mobile No.: 7483565189**  **Name: MANOJ B**  **USN No.:1AT21EC075**  **Email id:manoj2882003@gmail.com**  **Mobile No.: 9538395727** |
|  | **Team Leader of the Project:**  **Name: E A GOWRI**  **USN No.:1AT21EC034**  **Email id:eagowri@gmail.com**  **Mobile No.:7349259037** |
|  | **Processing Fee Details (Through Online Payment only):  (processing fee of Rs. 1180/-)**  **Please furnish the payment details in the format provided in the last page of the proposal.** |
|  | **Date of commencement of the Project:**  **September 2024** |
|  | **Probable date of completion of the project:**  **December 2025** |
|  | **Scope / Objectives of the project:**  1.Development and setting up of hardware model: We will connect the GPIO [General Purpose Input Output] of the Arduino nano ble33 Sense to flow sensor and the output pin to the Solenoid valve.  2.Collecting data: Audio samples of 2sec are collected and in a ratio of 4:3 the samples are split for training and testing.  3.raining the model: The system is trained to classify the voice input using a neural network.  4.Testing: the trained model is then tested on a fresh sample and the confusion matrix is drawn out from the result with expecting the efficiency above 80%.` |
|  | **Methodology:**  The current invention relates to the field of intelligent home application and provides an AI based touchless water dispenser unit. The water dispenser unit includes: a voice recognition module, to receive user interaction; a microcontroller, that processes data from the microphone and sensors, and controls the relay and flow sensor based on the voice commands; a flow sensor, for measuring the rate of flow of the water from the outlet of the sensor which is integrated with the relay to start and stop based on the voice command; a relay, based on the voice command recognized it allows the flow of water from the flow sensor and stops the flow when it reaches the requirement; OLED display, to monitor and visualize water flow data captured by the sensor.  **Note:** In case of fabrication work in the project, an engineering drawing with dimensions / detailed design should be attached to the proposal. |
|  | **Expected Outcome of the project:**  The project successfully demonstrated the integration of AI for voice recognition and IoT for controlling the water dispenser. Achieved a high accuracy of 82% in voice command recognition, ensuring reliable operation of the water dispenser. The touchless operation provides a hygienic and convenient user experience, reducing the need for physical contact. Utilized Edge Impulse for efficient model training and deployment, showcasing its capabilities in developing AI models for embedded devices. The OLED display provided real-time feedback on the recognized commands and the operational status of the water dispenser. |
|  | **Is the project proposed relevant to the Industry / Society or Institution?**  **Yes / No:** yes  **If yes, please provide details of the industry / institution and contact details:**  Atria institute of technology  (**Note:** Preference will be given to those projects relevant to the industry / institution. Hence be specific in giving detailed information). Is the industry extending support - technology / funds / use the final product, please specify. |
|  | **Can the product or process developed in the project be taken up for filing a Patent?**  **Yes / No:**  yes  **Prior Art search done?**  **Yes/No:** No  **Note:** If your answer is “Yes”, you may contact the Patent Information Centre of KSCST. For more details, email: pic@kscst.org.in |
|  | **Budget details (break-up details should be given):**  Note: KSCST will provide nominal grant support for carrying out the project by students if selected by the project selection committee.   | **Budget** | **Amount** | | --- | --- | | a) Materials -  Arduino Nano BLE senses - 5298  solenoid valve(1/4 inch) - 250  water flow sensor (1/4 inch) - 300  10m polycarbonate RO pipe - 159  HZ41WA water flow sensor (1/4 inch) -290  L shaped connectors (pack of 16) - 180  T shaped connectors(pack of 10 x 2) - 270  solenoid valve(1/4 inch) - 250 | 6997 | | b) Labor () | 00.00 | | c) Travel (Travel expenses cover trips to buy essential materials from local suppliers and visits to a nearby research facility to validate and test the project. This includes approximately ₹500 for purchasing materials and ₹500 for traveling to the testing site.) | 1000 | | e) Miscellaneous  Printing and photocopying project documents and reports.(304)  Internet charges related to project (recharge 899) | 1203 | | **Total** | 9,200 | |
|  | **Any other technical details (Please specify):** |
|  | **SPP Coordinator (Identified by the college):**  **Note:** To be identified by the principal of the institution. The project proposals must be submitted to KSCST through SPP coordinator designated by the principal.  **Name: Dr.Jyoti Metan**  **Email id: jyoti.m@atria.edu**  **Contact No.: 9901499699** |

| **Name of the Project Guide: Prof Bhaskar M.K** | **Name of the HOD:Jagadeesh H S** |
| --- | --- |
| **Email id:bhaskar.mk@atria.edu** | **Email id:ecehod@atria.edu** |
| **Contact No.:9741594742** | **Contact No.:9480101286** |

**DECLARATION**

**(From Project Students)**

(To scan this page and enclose in the project proposal)

We, the project team hereby declare that the details enclosed in the project proposal **“AI controlled touchless water dispenser”** Electronics and Communication Engineering, Atria Institute of Technology are true and correct to the best of our knowledge and belief. We undertake to inform the Karnataka State Council for Science and Technology (KSCST) of any changes to the project title or team members' names immediately through our project guide or the SPP Coordinator of our institution.

Additionally, we declare that the project work is original and not a result of copying or purchasing. We are committed to completing the project independently, with support from our faculty and project guide, while utilizing the facilities provided by the college. We will not engage in plagiarism and pledge to be sincere and dedicated in executing and completing the project as proposed.

We understand that if any of the above information is found to be false, untrue, or misleading, we may be held liable. We authorize the sharing of the project information contained in this proposal with KSCST, Bengaluru.

We acknowledge that the project team must exhibit and demonstrate the project, participate in the mid-term evaluation of sanctioned projects, and engage with experts. Additionally, we must exhibit the project at the Annual State-Level Poster Presentation and Exhibition, if selected. Should our team fail to participate in the mid-term evaluation or the Annual Exhibition (if selected), we understand that the supported project funds will be returned to KSCST.

We also enclose the endorsement form for KSCST, Bengaluru.

**Name of the students with USN No. Signature with date**

1. **E A GOWRI - 1AT21EC034**
2. **LIKHITHA SWAMY - 1AT21EC063**
3. **MANOJ B - 1AT21EC075**

| **(Name & Signature of Project Guide with Seal)** | **(Name & Signature of HOD with Seal)** |
| --- | --- |
| **Email id:bhaskar.mk@atria.edu** | **Email id:** |
| **Contact No.:9741594742** | **Contact No.:** |

**ENDORSEMENT**

**(From College, endorsement to be taken in the institution / Department Letter head)**

(To scan this page and enclose in the project proposal)

This is to certify that 1) Ms. EA Gowri , 2) Ms. Likhitha swamy 3) Mr. Manoj B , are bonafide student(s) of Department of Electronics and communication, in the degree program of our institution. If the project proposal submitted by these students under the 48th series of Student Project Programme is selected by KSCST, we will provide the requisite laboratory / Computer / infrastructure support in our college / Institution. Further we also take necessary steps to see that the project team will exhibit / demonstrate their project in the mid-term evaluation of project and in the Annual State-Level Poster Presentation and Exhibition (if selected). If the student team fails to send the completed project report or fails to attend the evaluation in mid-term evaluation of sanctioned projects or fails to attend the Annual State-Level Poster Presentation and Exhibition (if selected), the supported project amount will be returned to KSCST.

| **(Name & Signature of  Project Guide with Seal)** | **(Signature of HOD with Seal)** | **(Signature of the Principal with Seal)** |
| --- | --- | --- |
| **Email id:bhaskar.mk@atria.edu** | **Email id:** | **Email id:principal@atria.edu** |
| **Contact No.:9741594742** | **Contact No.:** | **Contact No.:** |

**DETAILS OF PROCESSING FEES MADE THROUGH   
NEFT / UPI PAYMENT**

(**Note:** Include this page in the softcopy of the student project proposal. The student team shall furnish the details in the Google Form. It is informed to the students to 1) keep ready the softcopy of the project proposal and other documents and 2) Furnish the payment made details as processing fees and 3) update the details in the Google Form on the same day of payment made to KSCST by NEFT / UPI payment).

| 1. TITLE OF THE PROJECT | : | VOICE CONTROLLED WATER DISPENSER USING AI-IOT |
| --- | --- | --- |
| 1. NAME OF THE TEAM LEADER | : | E A GOWRI |
| 1. EMAIL ID | : | eagowri@gmail.com |
| 1. CONTACT MOBILE NO. | : | 7349259037 |

**PAYMENT MADE DETAILS**

| 1. BANK REF. NO. / UTR NO. / UPI No. (12 digits) | : |  |
| --- | --- | --- |
| 1. TRANSACTION ID | : |  |
| 1. NAME OF THE SENDER / ACCOUNT HOLDER and CONTACT NUMBER | : |  |
| 1. NAME OF THE BANK | : |  |
| 1. PROCESSING FEES | : | Rs. 1,180/- (Inclusive of 18% GST) |
| 1. DATE OF PAYMENT MADE | : |  |
| 1. TIME | : |  |
| 1. MODE OF PAYMENT MADE (NEFT / UPI, PLEASE SPECIFY) | : |  |

| (Name & Signature of  the team leader) | (Name & Signature of  Project Guide or HOD with Seal) |
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**KARNATAKA STATE COUNCIL FOR SCIENCE AND TECHNOLOGY**

Indian Institute of Science campus, Bengaluru

**48th SERIES OF STUDENT PROJECT PROGRAMME (SPP)**

***(Note: This page is for information about bank details of KSCST to the student team and college / institution and not to include this page in the project proposal softcopy)***

**BANK ACCOUNT DETAILS OF KSCST**

| Name and address of the Institution | Karnataka State Council for Science and Technology, IISc Campus, Bangalore -560012 |
| --- | --- |
| Account holder’s name / Designation | Secretary, Karnataka State Council for Science and Technology |
| Bank Account No. & Name of the bank | Current A/C No. 0683201000024 Canara Bank, IISc Campus Branch, Bangalore-560012 |
| IFSC Code | CNRB0000683 |
| MICR Code | 560015023 |
| Bank Branch Address | Canara Bank, Indian Institute of Science, Bangalore-560012 |



