



INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal - 500 043, Hyderabad, Telangana

Information about how to do a Summer Research Internship (SRI) - Project

Supervisor / Mentor / Reviewer

Supervisor is responsible for assigning a SRI project and providing guidance and support to the students in order to help them achieve their project goals. A supervisor can be at a company or IARE. Reviewer can be from industry / company.

Project Coordinator of SRI Project

Responsible for scheduling / evaluating the student's work and determining if it meets the standards and requirements set by the institution or department. The Evaluator's role is to assess the student's performance and provide a fair and impartial evaluation of the project.

Learning outcomes

On completion of the project, the student should be able to:

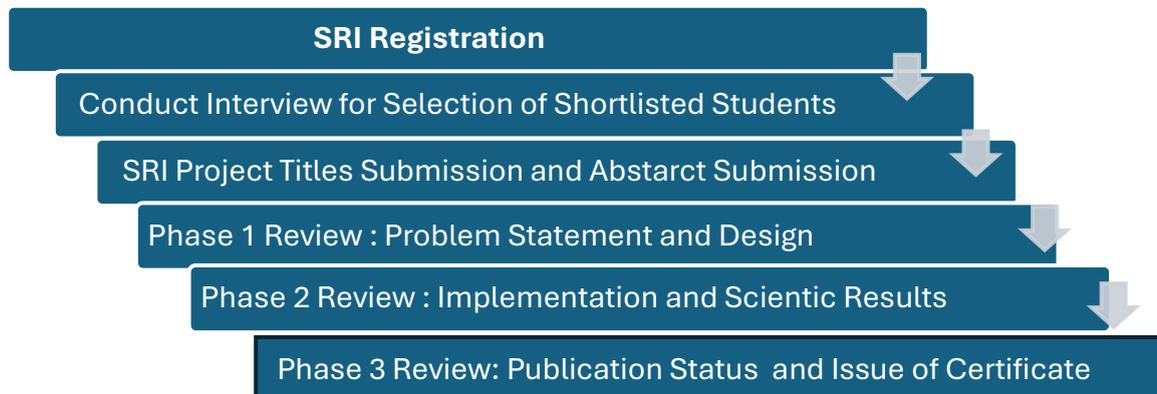
- show a deep knowledge within the chosen field of study
- search and in a critical way interpret and compile relevant scientific literature
- in a creative way delimit a scientific problem, plan a scientific study, choose appropriate methods, carry out the study, interpret and evaluate the results and, if applicable, generate a hypothesis to explain the observations all within given time frames
- present the results in correct language for different target groups both in scientific and in popular form
- give constructive criticism on texts within the study field

Industry frequently see SRI reports as internships, but that's not the view of the Institute. In particular, goes beyond a simple internship. That doesn't necessarily mean that an internship can't form the basis of a SRI project, but it is not enough.

A good way to make clear both to yourself and to the reviewer that you are doing a scientific study is to write one or more clear research questions in the SRI project proposal, i.e. questions that should be answered by the project and where the answers give new knowledge.

SRI Project Process

The process consists of the following steps as detailed below and summarised here.



1. Finding a project

Internally

Student should take the responsibility for taking ownership of the project, working diligently to complete it, and ensuring that it meets the academic standards and requirements set by the institution or the academic program. The student should demonstrate initiative, critical thinking, and problem-solving / research skills throughout the SRI project.

The SRI project coordinator and head of the department conducts SRI presentations for the selected interns in the following research areas:

- Quantum Machine Learning (QML)
- Quantum Optimization Techniques
- Quantum Error Correction and Fault Tolerance
- AI in System Development (AI Agents, and LLMs)
- AI in Software Development
- AI Agents
- Data Intense Computing

Students can read more about it on the IARE Samvidha – SRI projects weblink. If you are interested in an advertised SRI project in the department at the institute, prepare a **White Page (click for format)** to the head of the department or get in touch with **the Project Coordinator (Dr. K Rajendra Prasad, Head of CSE (Data Science) Department, dr.rajendraprasad@iare.ac.in)** of SRI Project by email, or in person.

Be prepared in taking initiative and anticipating what needs to be done before it's even asked of you. Don't wait for instructions; instead, actively seek ways to contribute and make a difference. Be ready to dive in with enthusiasm, knowledge and skills relevant to the project's objectives.

Furthermore, think deeply about how you are a good fit for the project. Consider your unique strengths, experiences, and passions that align with the project's goals. Demonstrating your genuine interest and how you can add value will increase your chances.

Externally

If you are interested in a internship project in another department, another institute / University (domestic / abroad), or a company, make sure you have a CV and cover letter ready for submitting a project plan ([click for proforma](#)).

It is the responsibility of the student to find a suitable internship project. Please start applying for projects early as responses to Dean of Professional Training and Internship (PTI) from a supervisor / handled are at a company or university may take some time.

2. Throughout the project

Attend all scheduled meetings as announced by the Project coordinator of SRI / reviewer.

Submit written parts of the report so far before each meeting corresponding to your progress. Keep the subject reviewer informed on how the project progresses.

Advice on writing

- The written report is very important. Consider that your report will be used as a personal merit and will be evaluated based on the metrics ([click here](#)).
- Start the writing process early. Don't leave it till the end, but do it continuously. It takes 15-20 days to write a good report.
- Remember that good language is important. The quality of the language is a learning outcome in the course so your report could be rejected due to bad language.
- The use of ChatGPT and other Large Language Model (LLM) Applications to write your report is left to the discretion of the examiner. Consult head of the department first before you use them.
- There are no rules about the size of a report, but a report shorter than 30 pages is probably incomplete. A report of 60 pages or more probably contains too much code or similar. In other words, a normal report is around 40 pages. Consult your head of the department / reviewers if you have further questions.
- For LaTeX templates, you can use the template provided by Dean of content delivery and publishing webpage ([click here](#)).
- [Here](#) is a document that contains advice for a SRI project report preparation.

3. Towards the end of the SRI project

Submit a draft version of the report to the project coordinator / supervisor / reviewer (normally two-three weeks) before the scheduled presentation date. An opponent will be assigned to you as well once a presentation is scheduled.

The finished version of the report will be sent to the assigned opponent and the examiner no later than a week before the scheduled presentation.

4. After presentation

Prepare the final version of the report based on feedback given during the presentation. Send the final version of the report to the project coordinator/ supervisor / reviewer for final approval.

5. Publishing

When you've done with final presentation, you should publish the written report to IARE Samvidha.

First you need to create a serial number for the front page.

Then you can upload the final version of the report to Samvidha. In case the problem statement is provided by industry or If the SRI project needs secrecy or a delayed time for publishing the report shall be archived but not published in Samvidha.

The SRI project is more likely to be published in conference proceedings than in journal titles.

Questions & Answers

Q1: *What counts as a problem/application area?*

In case of an applied project, any application area is ok as long as it requires advanced computational methods.

Q2: *What are the expected deliverables of an SRI project?*

Expected deliverables include a project proposal, literature survey report, implementation or experimental results, final technical report, presentation, and a research paper and optionally a patent draft, or prototype depending on project outcomes.

Q3: *Must the topic of the SRI project be clearly connected to a course in the programme?*

No, it does not have to, as long as it concerns.

Q4: *What does “large and/or complex data” mean, by the way?*

Any data that requires the application of advanced data science methods to solve the problem at hand. A database with 1000000 records is neither large nor complex.

Q5: *Do SRI projects contribute to academic credits or certifications?*

*SRI projects / Internships are academic mandatory, SRI successful completion is recognized through **certificates issued by IARE**, which strengthen students' academic profiles and are valuable for internships, placements, and higher education applications.*



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WHITE PAPER DESIGN TEMPLATE

A white paper is a report or guide that presents information and solutions to a specific problem or issue. It is a comprehensive document that is an in-depth analysis of a topic, including research findings, insights, and recommendations. White papers are often used in business and academia to inform and educate readers about a particular subject, technology, or product. They are typically written in a formal style and are often used to position a company or organization as a thought leader or expert in a particular field. White papers can be used for various purposes, such as lead generation, brand awareness, and to provide a detailed explanation of a complex topic or product. A white paper template is a pre-designed document that provides a framework and structure for creating a white paper. It typically includes a set of guidelines and instructions for creating an effective white paper, as well as pre-designed sections that can be customized to suit the specific needs of the project.

A white paper template typically includes the following sections.

Title page: This includes the title of the white paper, the name of the author or organization, and the date of publication.

Executive summary: This provides a brief overview of the white paper's contents, including the problem being addressed, the proposed solution, and the main findings and recommendations.

Introduction: This provides background information on the topic and explains the purpose and scope of the white paper.

Objective / Mission: This section outlines the problem or issue being addressed and provides relevant data and statistics to support the problem statement.

Recommendations / Solution: This section outlines the proposed solution or recommendations for addressing the problem.

Methodology: This section explains the research methods and data sources used to inform the white paper's findings and recommendations.

Results and analysis: This section presents the findings and analysis that support the proposed solution or recommendations.

References: This section lists the sources used to support the white paper's content. A white paper template can help ensure that the white paper is structured and formatted consistently, and can save time and effort by providing a pre-designed layout that can be customized to fit the specific needs of the project.