Research Website Project

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Created By:

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Date: 22-05-2021

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Acknowledgment

This research website and its accompanying documentation were developed under the guidance of **Prof. Ranjeet Kumar Rout**, Department of Information Technology , **National Institute of Technology (NIT) Jalandhar**.

We extend our sincere gratitude to Professor **Dr. Ranjeet Kumar Rout** for providing this opportunity and for offering continuous support, constructive feedback, and valuable insights throughout the development process.

This documentation is intended to serve as a long-term resource for maintaining and updating the website with ease, ensuring its sustainability and academic value.

INTRODUCTION

This documentation presents the structure and maintenance guide for the research website developed for **Prof. Ranjeet Kumar Rout** of **[Information Technology, NIT Jalandhar]**. The website showcases academic and research activities, including news, publications, projects, books, responsibilities, team members, and events.

Designed using Flask (Python) for the backend and Jinja2 templating for the frontend, the website employs a modular, JSON-driven architecture that allows for dynamic content updates without directly modifying the codebase.

This manual is intended to:

- Provide a complete overview of each section of the website.

- Guide faculty, assistants, or future students on how to update the website data through structured JSON files.

- Ensure continuity and ease of maintenance after handover.

The documentation is divided into the following main parts:

- Website Sections Overview: Layout and structure of each part of the site

- Admin/User Manual: Instructions for updating the site content using JSON files

- Contact Editing & Customization Notes

- Conclusion and Future Suggestions

Website Section Overview

The research website consists of multiple sections, each serving a specific purpose, from presenting academic work to showcasing lab members and events. The content is organized using HTML templates and dynamically populated using structured JSON data files. The following section-wise documentation outlines the purpose, data sources, editable fields, and structure of each component in the website.

Home Page

1. Purpose
The Home Page serves as the landing section of the website. It briefly introduces the research group or lab and highlights major achievements or navigation points to key sections.

2. Location in Codebase

Component	Path
Template File	`templates/home.html`
Data Source	Static content (HTML)

3. Editable Fields
Static HTML text and images in home.html

4. Notes
This page does not use dynamic data. All content must be manually edited in the HTML file.

News

1. Purpose
Displays news updates such as publications, events, achievements, or media features related to the research group.

2. Location in Codebase

Component	Path
Template File	templates/news.html
Data File	data/news_data.json
Images	static/images/news/

3. Editable Fields

Field	Description
image	Image filename for the news item
date	Date of the event or update
title	Headline of the news
excerpt	Short summary
full_text	Full content of the news
category	News category (e.g., Research, Event)

4. Example JSON

```
{
 "image": "news1.jpg",
 "date": "2023-06-15",
 "title": "New Research Published",
 "excerpt": "Quantum paper accepted...",
 "full_text": "Breakthrough in quantum
entanglement simulation...",
 "category": "Research"
}
```

Announcements

1. Purpose
Shows brief one-line important notices such as

submission deadlines, internal announcements, or new policies.

2. Location in Codebase

Component	Path
Data File	`data/announcement_data.json`

3. Editable Fields

Field	Description
text	Announcement content
date	Announcement posting date

4. Example JSON

```
{
  "text": "Paper submission deadline: July 30",
  "date": "2023-07-01"
}
```

People

1. Purpose
Displays profiles of team members, including Ph.D., M.Tech and B.Tech students, with their academic details and research interests.

2. Location in Codebase

Component	Path
Template File	`templates/people.html`
Data File	`data/people.json`
Images	`static/images/people/`

3. Editable Fields

Field	Description
name	Full name of the person

degree	Academic degree (e.g., Ph.D., M.Tech)
interests	List of research interests
image	Profile picture filename

4. Example JSON (please refer the json file for more details)

```
{
  "name": "Monika Khandelwal",
  "title": "(2021PHACSE001)",
  "degree": "Ph.D.",
  "interests": ["AI/ML in Computational Biology"],
  "image": "avatar_girl.png"
}
```

Main Section: Research

The "Research" section is a dropdown menu that contains three subsections:
1. Projects
2. Publications
3. Books

Each subsection has its own purpose, data source, and editable fields. These are described individually below.

Subsection: Projects

1. Purpose
Highlights the research projects undertaken by the professor or lab members, both completed and ongoing.

2. Location in Codebase

Component	Path
Template File	`templates/projects.html`
Data File	*`data/projects.json`*

3. Editable Fields

Field	Description
title	Project title

description	Summary of the project
year	Year of completion/start

4. Example JSON (please refer json file for further details)

```
{
  "title": "AI for Protein
Sequence Classification",
  "description": "This
project aims to classify
protein sequences using deep
learning approaches...",
  "year": 2023
}
```

Publications (with Scholar Integration)

1. Purpose
The Publications section displays academic work authored by the professor and lab members. It includes Journal and Conference papers grouped by year and topic. Publications are automatically fetched from Google Scholar and merged with manual entries.

2. Location in Codebase

Component	Path
Template File	templates/publications.html
Manual Data	data/manual_journals.json, manual_conferences.json
Scholar Data	data/scholar.json
PDFs (optional)	static/docs/papers/

3. Data Flow & Integration
- Manual data is pre-written in JSON files (manual_journals.json, manual_conferences.json)
- Scholar data is fetched dynamically using a script and saved in scholar.json
- data_loader.py merges the three json files and categorizes them in journal or conference.

4. Editable Fields (Manual Entries Only)

Field	Description
title	Title of the paper
authors	List of authors
venue	Journal or Conference name
year	Year of publication
topics	Keywords or research areas
doi	DOI link (if applicable)
Pdf	PDF filename (optional)
bibtex	BibTeX citation string

5. Example Manual JSON Entry (refer the json file for further details)

```
{
  "title": "AI for Agriculture",
  "authors": "Ishrat Nazeer, Saiyed Umer,
Ranjeet Kumar Rout",
  "venue": "Computers and Electrical
Engineering",
  "year": 2024,
  "topics": ["AI", "Agriculture"],
  "doi": "10.1016/j.compeleceng.2024.109542",
  "pdf": "paper1.pdf",
  "bibtex": "@article{...}"
}
```

6. Scholar Update Script

Script File	Description
scraper.py	Used to fetch and update (scholar.json)with latest data from Google Scholar
Trigger method	Manual: via button or CLI

Books

1. Purpose

Displays academic books authored or edited by the professor or research team. Each book entry includes a cover image, editors' names, and links to publisher or downloads.

2. Location in Codebase

Component	Path
Template File	templates/books.html
Data File	data/books_data.json
Cover Images	static/images/books/

3. Editable Fields

Field	Description
title	Book title
editors	Names of authors/editors
cover	Filename of the book cover image
link	External link to publisher/store
download	PDF or download link (optional)

4. Example JSON

```
{
    "title": "Artificial Intelligence
Technologies for Computational Biology",
    "editors": "Ranjeet Kumar Rout, Saiyed
Umer, Sabha Sheikh",
    "cover": "book1.jpg",
    "link":
"https://www.routledge.com/...",
    "download": "#"
}
```

Section: Responsibilities

1. Purpose

Lists the professor's academic and administrative roles, such as positions in committees, academic boards, and event organizations.

2. Location in Codebase

Component	Path
Template File	templates/responsibilities.html
Data File	data/responsibility.json

3. Editable Fields

Field	Description
text	Responsibility description

```
[
  {
    "text": "Coordinator - Departmental Research
Committee (DRC)"
  },
  {
    "text": "Member - M.Tech. Admission Committee"
  }
]
```

Main Section: Events

This section is divided into **three separate pages** or views:
- Seminars & Workshops
- Gallery
- Talks Delivered

Subsection: Seminars & Workshops

1. Purpose
Lists academic seminars and workshops hosted or attended by research group.

2. Location in Codebase

Component	Path
Template File	templates/seminar_workshop.html
Data File	data/seminar_workshop.json

3. Editable Fields

Field	Description
title	Seminar or Workshop title
date	Date of event
summary	Description of the event

4. Example JSON

```
{
    "title": "Workshop on Deep Learning for
Bioinformatics",
    "date": "2024-03-10",
    "summary": "A national-level workshop on
applications of DL in genomics and drug
discovery."
}
```

Subsection: Gallery

1. Purpose

Displays photos from lab events, workshops, or ceremonies.

2. Location in Codebase

Component	Path
Template File	templates/gallery.html
Image Folder	static/images/gallery/

3. Editable Fields

Images are manually added. You may optionally include captions using a HTML block.
Event Details are added in the html file directly.

Subsection: Talks Delivered

1. Purpose
Displays lectures or invited talks given by the professor at conferences, institutions, or workshops.

2. Location in Codebase

Component	Path
Template File	templates/talks_delivered.html
Data File	data/talks_delivered.json

3. Editable Fields

Field	Description
title	Title of the talk
event	Name of the conference/workshop
location	Institute or location
date	Date of the talk

4. Example JSON

```
{
    "title": "AI and Ethics in Bioinformatics",
    "event": "National Seminar on Computational
Biology",
    "location": "IIT Mandi",
    "date": "2023-11-12"
}
```

Section: Contact

1. Purpose
Displays the professor's contact information, such as email, phone number, office address, and optionally a contact form. This section helps visitors reach out for academic queries or collaborations.

2. Location in Codebase

Component	Path
Template File	templates/contact.html
Data File	*None (static HTML)*

3. Editable Fields

Field	Description
email	Professor's official email address

Field	Description
phone	(Optional) Contact phone number
address	Office location or department address
map iframe	(Optional) Google Maps iframe embed

4. Steps to Edit

1. Open the file: templates/contact.html in a text editor or IDE.
2. Locate the <p> or <div> elements containing:
   - Email
   - Phone
   - Address
3. Manually update the content inside those tags.
4. Save and refresh the website.

6. Notes
- This section does **not use a JSON file**—changes are made directly in the HTML.
- Make sure you don't accidentally delete HTML tags when editing.
- If needed, you can wrap the email in a clickable mailto link:

```
<a
href="mailto:professor@nitj.ac.in">professor@nitj
.ac.in</a>
```

Image & File Management Guidelines

Folder Path	Description
/static/images/people/	Profile photos of lab members
/static/images/news/	Thumbnails for news posts
/static/images/books/	Cover images of books
/static/images/events/	Event banners or workshop photos
/static/images/gallery/	Event gallery images (group photos)
/static/images/projects/	Visuals or diagrams related to projects
/static/images/publications/	(Optional) Infographics for publications
/static/docs/papers/	PDF files of journal/conference papers
/static/docs/DOC1.pdf	Static documentation (e.g., project manual)

Guidelines for Image Uploads:

Type	Folder	Recommended Size (px)	Notes
Profile	/images/people/	300 x 300	Use square images
News	/images/news/	800 x 450	Landscape for slider display
Books	/images/books/	200 x 300	Portrait book covers
Events	/images/events/	variable	Use compressed JPGs
Gallery	/images/gallery/	800 x 600	High quality, compressed
Projects	/images/projects/	optional	Diagrams or icons

Conclusion

This documentation is intended to ensure that the research website remains maintainable, scalable, and useful for academic representation. With clearly structured JSON files, organized image directories, and simple instructions, any authorized user can update the site content efficiently.

By following the admin guide and best practices, future contributors— including students and assistants—can confidently manage content without needing in-depth web development skills.

This living document can evolve along with the website. Further enhancements like an admin panel or automation features can be added over time as the project grows.