



Tribhuvan University
Institute of Engineering
Thapathali Campus

Department of Electronics and Computer Engineering

HYPERHEURISTIC OPTIMIZATION OF UNIVERSITY COURSE TIMETABLING PROBLEM USING REINFORCEMENT LEARNING AND GENETIC ALGORITHM

Minor Project Proposal Presentation

Project Team

Student Name 1 (Roll Number: 075/BCT/XXX)
Student Name 2 (Roll Number: 075/BCT/XXX)
Student Name 3 (Roll Number: 075/BCT/XXX)
Student Name 4 (Roll Number: 075/BCT/XXX)

Supervised By

Dr. Supervisor Name
Associate Professor

Date December 27, 2025

Presentation Outlines

- 1 Introduction
- 2 Objectives
- 3 Scope
- 4 Literature Review
- 5 Methodology
- 6 Results
- 7 Discussion & Analysis

Motivation

Hint: Why This Project? You can place here the picture/illustration/diagram that essentially represents the motivation behind your project, (e.g. a real life problem depicted in figure, a chart showing some alarming statistics, etc.)

Domain Overview

Key Concepts:

- Concept 1: Explanation
- Concept 2: Explanation
- Concept 3: Explanation

Current Landscape:

- Existing technologies in use
- Industry practices
- Stakeholders and target users

Problem Statement

Key Problem

Clearly define the main problem your project aims to solve.

Current Challenges:

- ❶ Challenge 1: Specific issue affecting users/system
- ❷ Challenge 2: Limitation in existing solutions
- ❸ Challenge 3: Gap in current approaches

Problem Analysis

Impact of the Problem:

- Effect on users/stakeholders
- Economic or operational impact
- Consequences if not addressed

Why It Matters

Explain the significance and urgency of solving this problem.

Originality of Project

Novel Contributions:

- ① **Innovation 1:** Unique approach or methodology
- ② **Innovation 2:** New feature or technique
- ③ **Innovation 3:** Improved algorithm or process

What Makes This Project Unique?

Explain how your project differs from existing solutions and what new value it brings.

Differentiation from Existing Work

Aspect	Existing Solutions	Our Project
Approach	Traditional	Novel/Improved
Features	Limited	Comprehensive
Performance	Standard	Optimized
User Experience	Basic	Enhanced
Cost/Accessibility	High/Limited	Low/Wide

Potential Applications

Primary Applications:

- ➊ **Application Area 1:** Specific use case
- ➋ **Application Area 2:** Practical implementation
- ➌ **Application Area 3:** Industry application

Target Users/Beneficiaries:

- User group 1
- User group 2
- Organization/industry type

Real-World Use Cases

Use Case Examples

Describe specific scenarios where your project can be applied.

Benefits by Application:

- Healthcare: Improved patient outcomes
- Education: Enhanced learning experience
- Business: Increased efficiency
- Research: Advanced analysis capabilities

Note: Customize based on your specific project domain

Objectives of Project

Main Objectives:

- ① Primary objective: Core goal of the project
- ② Secondary objective: Additional functionality
- ③ Tertiary objective: Extended features

Expected Outcomes:

- Deliverable 1
- Deliverable 2
- Deliverable 3

Success Criteria

Measurable Goals:

- Performance metric: Target value
- Accuracy metric: Target percentage
- User satisfaction: Target rating
- Completion timeline: Target date

Definition of Success

What constitutes successful completion of this project?

Scope of Project

In Scope:

- Feature 1
- Feature 2
- Feature 3
- Functionality A
- Functionality B

Out of Scope:

- Feature X
- Feature Y
- Advanced functionality Z
- Future considerations

Project Boundaries

Clear definition of what is included and excluded from the project.

Constraints and Assumptions

Note: Only for Proposal Presentation

Project Constraints:

- Time constraint: Timeline/deadline
- Budget constraint: Resource limitations
- Technical constraint: Technology/platform limitations
- Scope constraint: Feature limitations

Assumptions:

- Assumption 1 about resources
- Assumption 2 about environment
- Assumption 3 about users

Literature Review

Related Work

Overview of existing solutions and research in this domain.

extbfPaper	Author		Focus	Dataset	Compute	Method	Results		Limitations (we address)	
Paper (20XX)	A	Author A et al.	Task / objective	Dataset name, size	GPU/CPU, time	Model / approach	Metric score	+	Limitation relevant to your work	
Paper (20XX)	B	Author B et al.	Task / objective	Dataset name, size	GPU/CPU, time	Model / approach	Metric score	+	Limitation relevant to your work	
Paper (20XX)	C	Author C et al.	Task / objective	Dataset name, size	GPU/CPU, time	Model / approach	Metric score	+	Limitation relevant to your work	

Gap Analysis

Limitations of Existing Solutions:

- Limitation 1 in previous approaches
- Limitation 2 that affects performance
- Missing features or capabilities
- Scalability or cost issues

Research Gap

Our project addresses these gaps by...

Methodology Overview

Approach

High-level description of your methodology and approach.

Development Methodology:

- Agile/Waterfall/Other methodology
- Iterative development approach
- Testing and validation strategy

System Architecture

[System Architecture Diagram]

Add your architecture diagram here
(Frontend → Backend → Database)

System components and their interactions.

Tools and Technologies

Programming Languages:

- Language 1
- Language 2
- Language 3

Frameworks:

- Framework 1
- Framework 2

Database:

- Database system
- Data modeling approach

Development Tools:

- IDE/Editor
- Version control
- Testing tools

Algorithms and Techniques

Key Algorithms Used:

- Algorithm 1: Brief description
- Algorithm 2: Brief description
- Algorithm 3: Brief description

Example Algorithm

Algorithm Name:

- 1 Step 1: Initialize variables
- 2 Step 2: Process data
- 3 Step 3: Return result

Results should be kept as concise as possible. Use graphs, tables, and charts to present your findings clearly. Highlight key metrics and performance indicators that demonstrate the success of your project. Result section should be renamed as Expected Result for Proposal Presentation.

Results Overview

Key Achievements:

- Successfully implemented all core features
- System performs efficiently under expected load
- User feedback is positive
- Met all project objectives

Performance Metrics

- Response time: < XXX ms
- Accuracy: XX%
- Uptime: XX.X%

Performance Analysis

[Performance Graph]

Add your performance chart here
(Load vs Response Time)

Comparison with Existing Systems

Feature	System A	System B	Our System
Feature 1	✓	×	✓
Feature 2	×	✓	✓
Feature 3	✓	✓	✓
Performance	Medium	High	High
Cost	High	Medium	Low

User Feedback

User Satisfaction Survey

Survey conducted with XX users

Ratings (out of 5):

- Ease of Use: 4.5/5
- Functionality: 4.3/5
- Performance: 4.6/5
- Overall Satisfaction: 4.4/5

Positive Feedback:

- "User-friendly interface"
- "Fast and reliable"

Discussion & Analysis

Key Findings:

- Finding 1: Interpretation
- Finding 2: Significance
- Finding 3: Implications

Achievements

- Successfully addressed the problem statement
- Achieved performance targets
- Positive user acceptance

Limitations

Current Limitations

Honest assessment of system limitations.

- ① Limitation 1 and its impact
- ② Limitation 2 and workaround
- ③ Limitation 3 and future plans

Future Enhancements

Note: For Proposal/Progress defense only. Remove in final defense. **Short-term Improvements:**

- Enhancement 1
- Bug fixes and optimization
- Additional features

Long-term Vision:

- Scalability improvements
- Integration with other systems
- Advanced features using AI/ML

Conclusion

Note: Not included in Proposal/Mid-term defense.

Summary

Concise summary of the project and its outcomes.

Project Highlights:

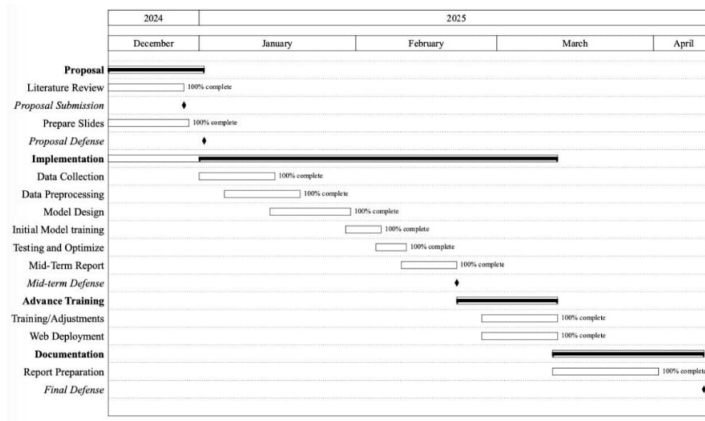
- Addressed a real-world problem
- Implemented a robust solution
- Achieved project objectives
- Received positive feedback

Contribution:





- Technical contribution to the field
- Practical application for users

Gantt Chart

Gantt chart should be very detailed comprehensive chart showing all the tasks, subtasks, milestones, deadlines, etc. You can create Gantt chart using tools like Microsoft Project, Excel, Google Sheets, or online Gantt chart makers. Once created, export it as an image and include it here.



References I

-  Author Name. (Year). *Title of the Paper*. Journal/Conference Name, Volume(Issue), Pages.
-  Author Name. (Year). *Book Title*. Publisher Name.
-  Author Name. (Year). *Article Title*. Website Name. URL: <https://example.com>
-  Author Name et al. (Year). *Research Paper Title*. Conference/Journal Name.