



# Research Detail / Research Interest

Applied AI for Intelligent Decision Support and Responsible Data-Driven Systems

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Academic Background	Diploma Tiga (D3) in Management Informatics, Universitas Gunadarma   GPA/IPK 3.89/4.00
Target University	Tsinghua University, China
Target Program	Zijing College - Global Talents in Science and Engineering Program
Target Degree	Bachelor of Engineering in Interdisciplinary Engineering
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### Research Interest Status

This is an undergraduate research-interest document for professor contact and application review. It is not a final thesis proposal; it is a focused direction that can be refined later through coursework, laboratory exposure, and professor guidance at Tsinghua Zijing College.

### Research Title

Applied Artificial Intelligence for Intelligent Decision Support and Responsible Data-Driven Systems

### 1. Background

Artificial Intelligence has become increasingly important for prediction, classification, automation, monitoring, and decision-making. Many organizations and public services collect data, but they still need reliable systems that can transform data into useful insight and action-oriented support. With my background in Management Informatics, I am interested in how Computer Science can build intelligent systems that are technically reliable, ethical, secure, and useful to real users.

### 2. Research Interest

My research interest focuses on Applied AI, Intelligent Systems, Software Engineering, and Data-Driven Decision Support. I want to explore how machine learning, data systems, and software architecture can be combined to build systems that help users make better decisions. I am especially interested in education analytics, IT service operations, business intelligence, smart digital services, and responsible AI implementation.

### 3. Research Problem

In many real-world environments, data is available but not used effectively for prediction, prioritization, recommendation, or early warning. Systems may produce reports, but they often do not offer clear explanations, reliable workflows, or action-oriented guidance. This creates an opportunity to design AI-enabled systems that are accurate, explainable, maintainable, and aligned with human needs.

### 4. Proposed Direction

- Study AI-enabled decision-support workflows for prediction, prioritization, monitoring, recommendation, and service improvement.
- Explore machine learning and data-processing methods suitable for practical and understandable AI applications.
- Connect AI models with software engineering so the system can be implemented, tested, maintained, and improved.
- Consider responsible AI principles, including data quality, transparency, fairness, privacy awareness, and human-centered use.



## 5. Preliminary Research Questions

- How can applied AI improve prediction, prioritization, or recommendation in practical information systems?
- How can data preparation, feature selection, and evaluation improve the reliability of AI-enabled decision support?
- How can AI results be communicated clearly through dashboards, explanations, or software interfaces?
- How can responsible AI principles be integrated into software systems used by real organizations and communities?

## 6. Possible Methodology

Step	Description
Literature Review	Review applied AI, intelligent systems, decision support, machine learning, software engineering, and responsible AI.
Scenario Selection	Select a practical context such as education analytics, IT operations, smart service monitoring, or digital public services.
Model and System Design	Prepare data, build simple models, evaluate performance, and design a usable software or dashboard workflow.
Evaluation and Reflection	Evaluate accuracy, usefulness, maintainability, explainability, and responsible implementation considerations.

## 7. Expected Contribution

The expected contribution is a clear understanding of how applied AI can be designed and integrated into practical systems that support better decision-making. This direction fits the Information Stream / Computer Science path because it combines algorithms, data systems, software engineering, AI, and responsible technology design.

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