SOEN 6841 SOFTWARE PROJECT MANAGEMENT

PROJECT - AI BASED ACADEMIC ADVISOR

Submission Date	**:**	**10/11/2024**
Term	**:**	**Fall 2024**

Group 15

Group Members Names and ID's:

Karthikeyan Umesh 40297694

Jonathan Lupague 40260855

Mohsin Freoz 40292132

Minhazul Islam 40291529

Riya Gupta 40292903

Project GitHub Repository:

https://github.com/Riyaguptacse/soen6841f24

INDEX

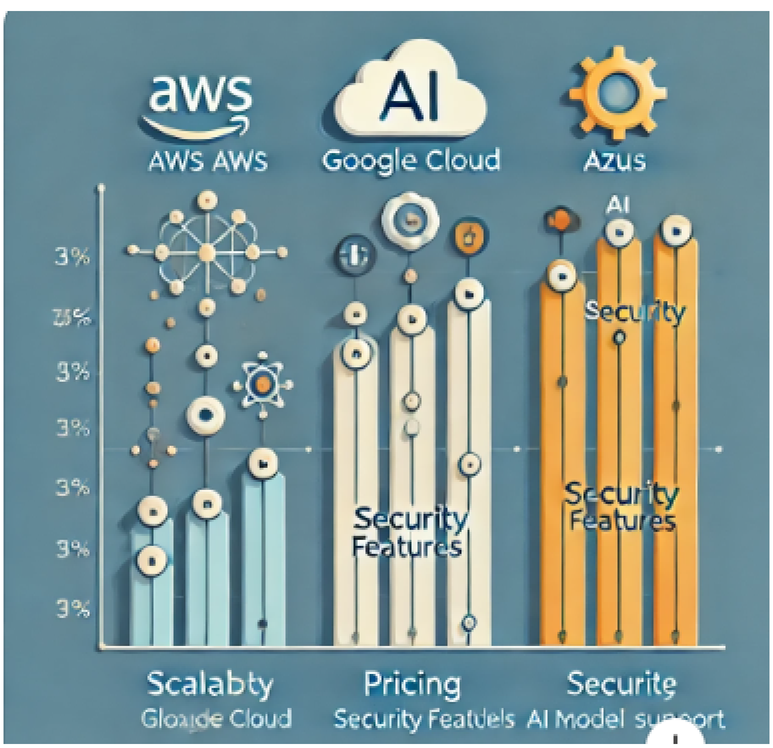
Section No.	Section Name	Page Number
1	Feasibility Study	
2	Solution Proposal	
3	Project Plan	
4	Risk Assessment and Mitigation Plan	
5	Budgeting and Resource Costing with Outsourcing	
6	References	

We'll look at three main aspects to determine whether an AI-based academic advisor is feasible:

1. Technical Feasibility
Technology Requirements: Machine learning techniques, natural language processing (NLP) for dialogue, and strong data analytics skills are probably going to be needed for the solution. Essential components include a reliable AI model (such as GPT, BERT, or bespoke models), a knowledge base of academic programs, courses, and prerequisites, as well as interface with existing student information systems (SIS).
Data Availability: A wealth of information on course offerings, requirements, student performance, and user comments will be required by the AI. Privacy issues need to be addressed, especially when student data is involved.
Infrastructure Requirements: Enough processing power is required for both model deployment and training. To scale the system affordably, cloud providers (such AWS, Google Cloud, or Azure) could be used.
Technical Expertise: For initial setup and continuing maintenance, proficient AI developers, data scientists, and educational domain experts are necessary. The group will require expertise in data protection, natural language processing, and AI model training.

Cloud Service Comparison (For Infrastructure):

- **AWS vs. Google Cloud vs. Azure** (highlight scalability, pricing, and services)



2. Operation Feasibility

Availability of Resources: Data, technology, and personnel must all be easily accessible. Educational institutions must support the project in order to integrate the data into their systems. It will also be essential to teach employees on AI maintenance and operation.

Scalability: The AI adviser ought to be able to manage several users at once. It should scale to meet demand without sacrificing dependability or performance if properly implemented.

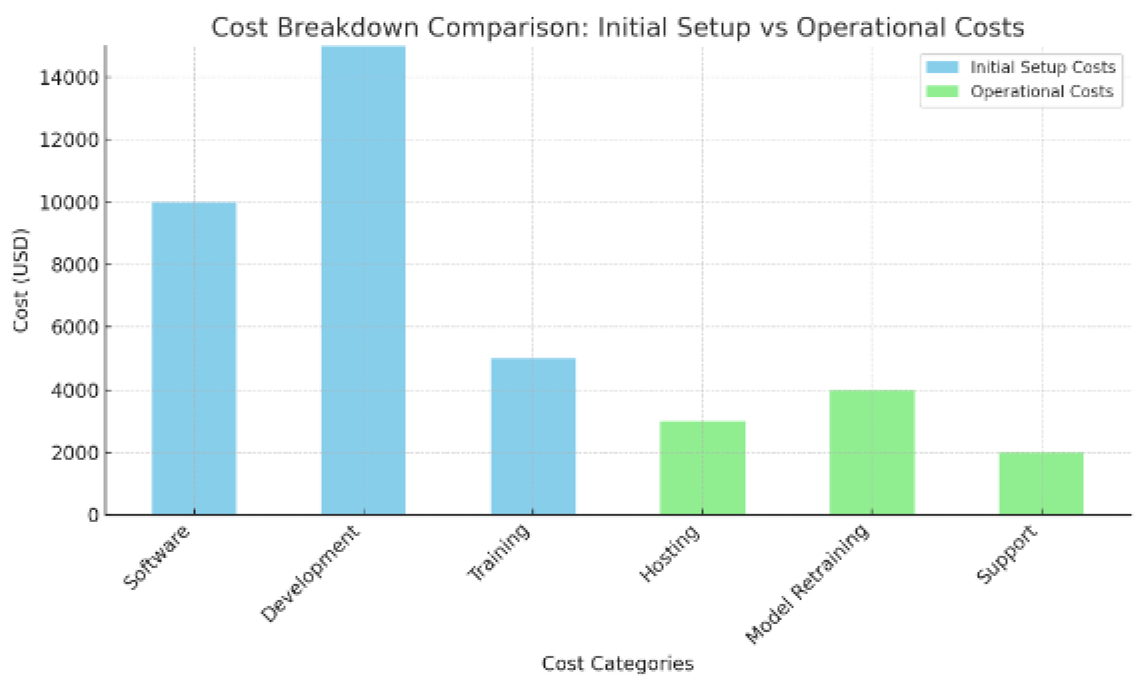
User Adoption and Training: For smooth communication, academic advisers and students require an intuitive interface. It will be easier to implement and guarantee efficient use if staff and students receive training.

Maintenance and Support: To stay accurate, the AI system will require regular updates, such as content updates and model retraining. For monitoring, troubleshooting, and improvement, a support staff is necessary.

Student Adoption Timeline:

Early adopters, gradual adoption, and mass adoption Visual: A line graph showing adoption over time, perhaps with a predicted growth trajectory.

3. Economic Feasibility
Software development, data collecting, training AI models, cloud infrastructure, and staff are all included in the initial investment costs. Development and setup expenditures may result in high initial costs.
Operational Costs: Following launch, expenses will arise for support personnel, hosting, upkeep, and updates. By improving data utilisation and model efficiency, cloud hosting expenses can be kept under control.
Possible ROI: The AI adviser might ease the workload for academic advisors who are human, increasing productivity and freeing them up to concentrate on more complicated issues. Particularly in large or online universities, quicker and more individualised advising may result in higher student satisfaction and retention rates.
Revenue Generation: Collaborating with educational institutions or charging students a subscription fee are two ways to monetise. Improved academic achievement and higher student retention may indirectly result in financial gains.
Initial setup vs. operational costs Visual: A stacked bar graph to visually differentiate between one-time investments (software, development, training) vs. recurring costs (hosting, model retraining, support).



Here is the stacked bar graph visualizing the cost breakdown comparison between initial setup and operational costs. The graph differentiates one-time investments (software, development, training) from recurring costs (hosting, model retraining, support). The initial setup costs are displayed in sky blue, while the operational costs are shown in light green.

Challenging component: Navigating Complexity for Future-Proof AI Solutions

Data ownership, prejudice, systemic risk, model responsibility, ethical considerations, sustainability, stakeholder alignment, opposition to change, and technical difficulties are some of the obstacles to the use of AI in academic advising. Because AI systems may inherit biases from prior data, which would reinforce disparities, data ownership and governance are essential. Maintaining personal relationships and preventing job displacement require striking a balance between human input and AI skills. AI systems must be in line with sociocultural dynamics and ethical norms, and model accountability and transparency are also essential. Financial sustainability and long-term institutional support are also essential.The introduction of an AI-based academic advisor goes beyond the technicalities of model training and system deployment—it introduces complex layers of ethical, governance, and operational challenges that require careful navigation. By addressing issues such as bias, data governance, system accountability, and stakeholder resistance, institutions can lay the foundation for a truly sustainable and impactful AI solution in academic advising. However, the success of such a system is contingent not only on the immediate feasibility but also on the long-term adaptability and alignment with evolving educational philosophies and regulatory environments.

In conclusion

If the school is willing to invest in top-notch AI models and committed support, the AI-based academic advisor appears feasible based on the aforementioned considerations. Securing a strong technological infrastructure, guaranteeing data availability, and budgeting for ongoing maintenance and operating expenses are all critical success aspects. Because of the enhanced student experience and expedited advising procedures, the potential return on investment is encouraging; nonetheless, sustainability depends on careful budget allocation and continuous management.

Solution Proposal

Solution Overview

a) Comprehensive Description of the Proposed Software Solution

Description: The "AI-Based Academic Advisor" is a personalized advising tool designed to guide students through course selections, academic milestones, and career path options. Built with AI and machine learning, the solution will integrate with university databases to access academic records and understand students’ progress, preferences, and challenges. The system offers personalized recommendations, real-time academic tracking, career guidance, and scenario-based planning.

Architecture and Scalability: The core architecture comprises a cloud-based AI model and an interface designed for both students and advisors. It leverages an API-based data pipeline to seamlessly integrate with Learning Management Systems (LMS) and Student Information Systems (SIS) for real-time data access. The design will be scalable, allowing expansion to multiple departments or institutions, and secure, following data protection standards like GDPR and FERPA.

b) How It Addresses the Identified Problem or Opportunity

The AI-Based Academic Advisor directly addresses the need for scalable, personalized academic support. In large institutions, students often struggle with accessing timely, relevant guidance due to limited advisor availability. By providing personalized course suggestions, degree planning, and career insights based on individual academic trajectories and labor market data, the solution aims to enhance students' academic success and career preparedness.

This solution improves upon traditional advising methods by integrating academic data with predictive analytics, allowing for dynamic adjustments to students’ plans. Use cases, such as students with specific career aspirations, showcase how the system tailors advice to align with both academic requirements and market trends.

Key Features and Functionalities

a) Essential Features and Functionalities

1. **Personalized Course Recommendations:**
    - AI-based suggestions on courses that align with students' academic goals, considering prerequisites, requirements, and GPA thresholds.
2. **Real-Time Academic Tracking and Alerts:**
    - Sends alerts for crucial deadlines, career opportunities, and potential academic concerns.

3. **Career Path Recommendations:**
    - Provides career advice aligned with students' academic progression and market trends, suggesting internships, workshops, and certifications.
4. **Integration with University Systems:**
    - Allows advisors to access students' academic data and progress through an interactive dashboard.
5. **Gamified Engagement Tools:**
    - A reward system to encourage students' active engagement with their academic and career planning.

Feature	Description
Personalized Course Suggestions	Recommends courses based on academic record, preferences, and career goals
Academic Tracking and Alerts	Real-time tracking, deadlines, and academic alerts
Career Path Guidance	Market-driven career suggestions, including internships and skills
Integration with LMS/SIS	Syncs with university systems for comprehensive advising
Gamified Engagement	Encourages user engagement with goal tracking and rewards

b) Use Cases or Scenarios Illustrating How Users Will Interact with the Solution

Use Case 1 - Course Selection Support:

- **Scenario:** A first-year student, Alex, is uncertain about which courses to take for their major in Software Engineering.
- **Interaction:** The AI-Based Advisor uses Alex's academic records and career aspirations to suggest courses that align with both their graduation requirements and market-demand skills.

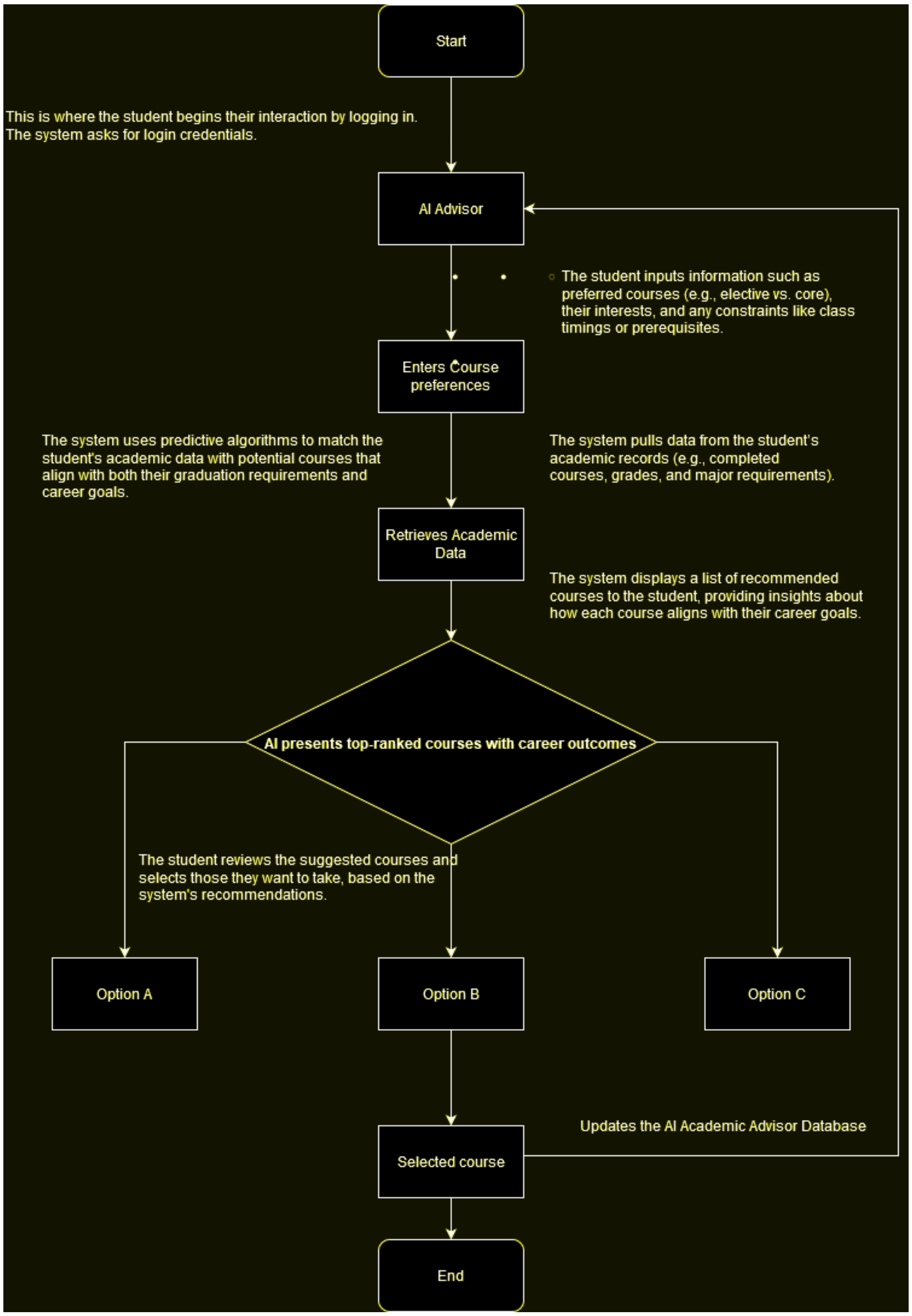
Use Case 2 - Career Path Guidance:

- **Scenario:** Samantha, a third-year Computer Science student, is interested in AI research but unsure about industry-specific skills.
- **Interaction:** The system evaluates Samantha's completed courses and recommends supplementary certifications and relevant AI electives, directing her toward research-based internships.

Use Case 3 - Alerts and Tracking:

- **Scenario:** Jamie, a second-year student, is struggling to meet GPA requirements for their desired graduation plan.
- **Interaction:** The system sends proactive alerts with academic resources, tutoring options, and course recommendations to help Jamie improve their academic standing.

Process Flow Diagram:

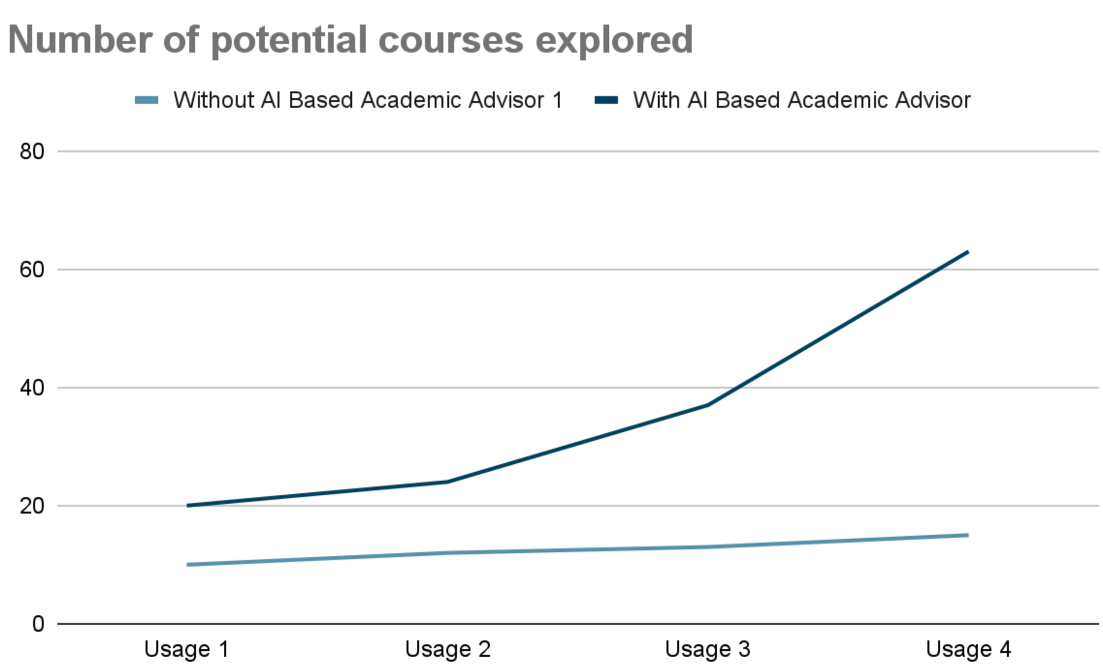


Benefits and Impact

a) Benefits that Users and Stakeholders Will Derive from the Solution

- **Students:** Students gain personalized support, enabling them to make informed academic choices, improve their career readiness, and meet graduation requirements on time.
- **Academic Advisors:** Advisors can efficiently manage larger caseloads, focusing on students requiring additional guidance.
- **University Administration:** The institution benefits from improved retention rates and student satisfaction, as the AI-driven advising system helps students stay on track academically.

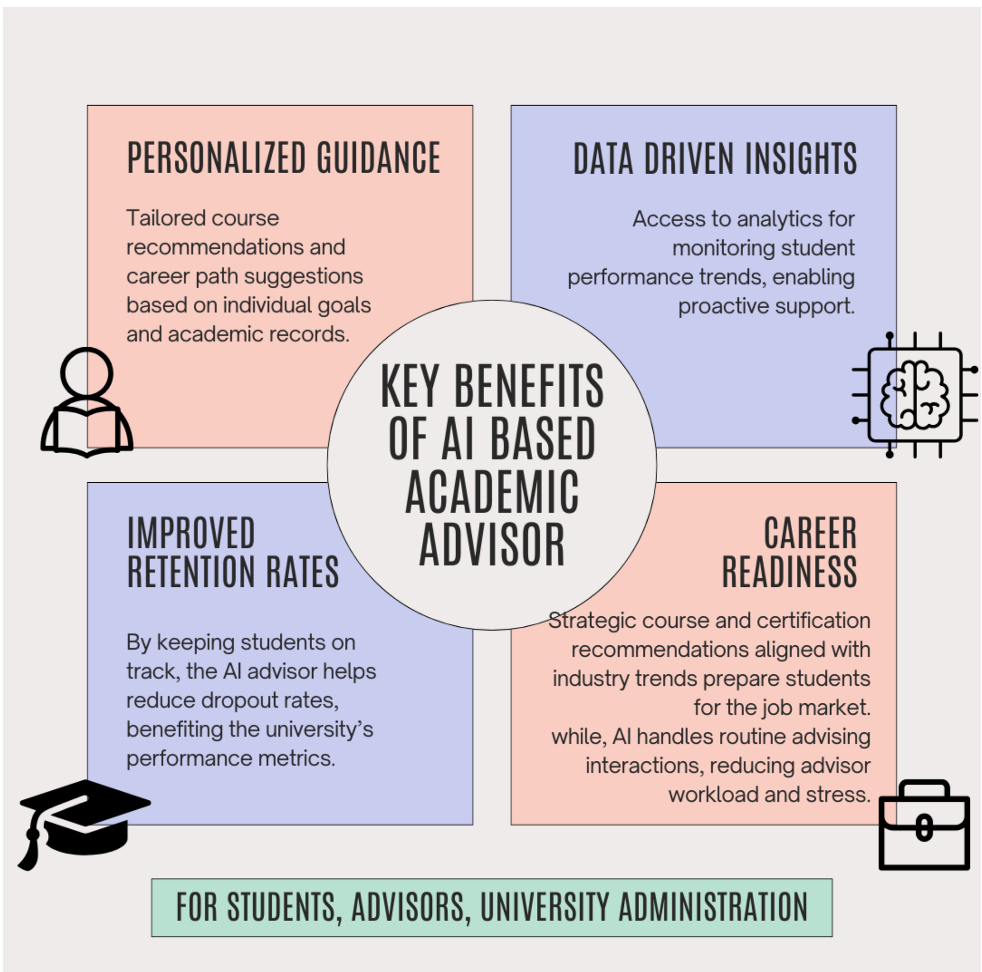
Stakeholder	Short-Term Benefits	Long-Term Benefits
Students	Course guidance, career clarity	Improved career readiness, timely graduation
Advisors	Efficient case management	Reduced workload, better student engagement
University Admin	Increased student satisfaction, retention	Enhanced reputation, optimized advising resource allocation



b) Expected Impact on the Target Audience and the Broader Domain

The AI-Based Academic Advisor has the potential to reshape academic advising by automating routine guidance and focusing human resources on more complex cases. The system's predictive analytics help students succeed academically and transition smoothly into the workforce. Broader adoption in the education sector could lead to a shift toward data-driven, personalized education models, positively impacting students and educational institutions.

Impact Level	Description
Short-Term	Enhanced academic decision-making, proactive intervention for at-risk students
Long-Term	Improved educational outcomes, career alignment, transformative advising models for the industry



Risk Assessment and Mitigation Plan for AI-Based Academic Advisor

Objective:
This plan aims to identify, analyze, and develop mitigation strategies for the associated risks while developing and deploying an AI-based academic advisor. Mitigations shall focus on reducing challenges and uncertainties for smooth project execution and successful outcomes.

1. Risk Identification

Comprehensive List of Potential Risks:

Risk Category	Description
Technical Risks	Technological, algorithmic selection, and data quality challenges.
Operational Risks	Issues arising from project management, staffing, and collaboration.
Economic Risks	Financial constraints, budget overruns, and resource limitations.
Project-Specific Risks	Potential delays in project milestones and scope creep.

- **Technical Risks:**
  - **Algorithm Inefficiency:** AI models, such as NLP and recommendation engines, can be suboptimal, impacting prediction accuracy.
  - **Integration Challenges:** Integrating the academic advisor system with the existing university databases may lead to compatibility and security problems.
  - **Data Privacy Risks:** Handling sensitive student data raises privacy concerns, particularly compliance with data protection regulations.
- **Operational Risks:**
  - **Resource Availability:** The unavailability of necessary resources, including skilled AI developers and data scientists.
  - **User Adoption and Resistance:** Students and faculty may be resistant to using the AI-based advisor due to their preference for traditional methods.
  - **Training Requirements:** Time and resources needed to train students and staff in the use of the system.
- **Economic Risks:**
  - **Budget Overrun:** The possibility of unplanned expenses in the form of extra software licenses or outside consultants for AI skills.
  - **Maintenance Costs:** The future costs of maintenance, especially updating the AI models, can be more than what was initially budgeted.
- **Project-Specific Risks:**
  - **Schedule Delays:** Potential delays in project milestones due to dependencies on data procurement, model training time, or technical issues.

➢ **Scope Creep:** The expansion of project requirements due to evolving expectations from stakeholders, which may impact time and resources.

2. Risk Impact Analysis

Assessment of Risk Impact and Prioritization:

Risk	Impact Level	Likelihood	Priority (High, Medium, Low)
Algorithm Efficiency	High	Medium	High
Data Quality and Availability	High	High	High
System Integration	Medium	Medium	Medium
Model Interpretability	Medium	Low	Low
Project Delays	High	Medium	High
Resource Allocation	High	Medium	High
Communication Gaps	Medium	Medium	Medium
Budget Constraints	High	Medium	High
Cost Overruns	Medium	Low	Low
Data Breaches	High	Low	High
Compliance with Privacy Laws	High	Medium	High
Policy Compliance	Medium	Low	Low
Liability	Medium	Low	Medium

Risk Impact Analysis

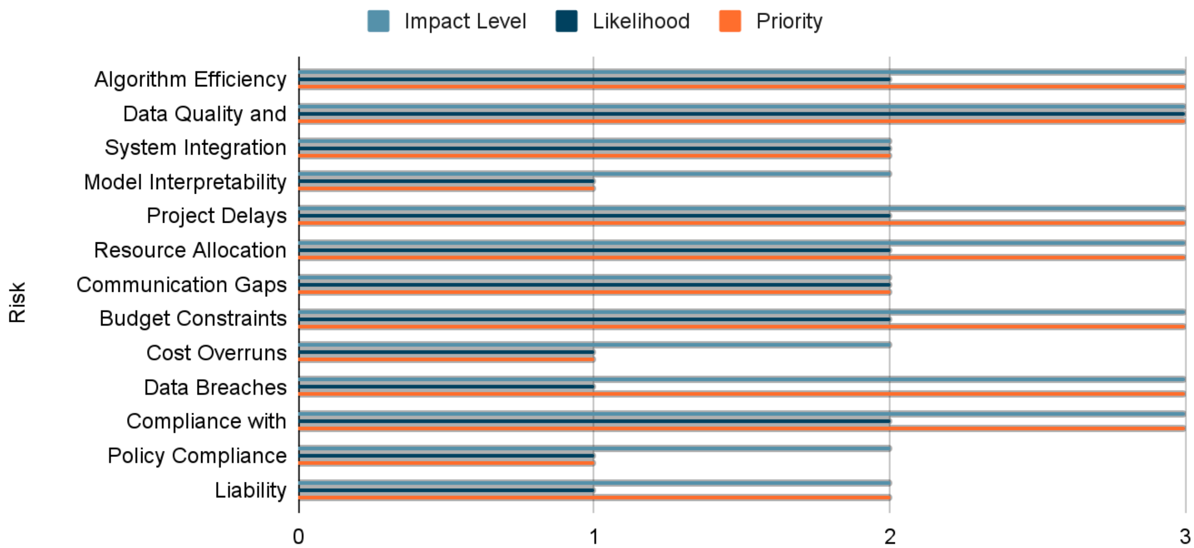


Fig: Risk Impact Analysis (Low = 1, Medium = 2 and High = 3)

3. Risk Mitigation Strategies

- **Algorithmic Inefficiency**
  Extensive testing by the team using different academic datasets will help the algorithm learn how to handle most scenarios for the best performance. Testing will reveal certain of its weak points and their finetuning in advance.
  - **Contingency Plan:** In case of failure in performance, iterative updates will be done, refining the algorithm with feedback and new data. This will help make adjustments during the whole project life cycle and not wait until the end.
  - **Example:** If the preliminary tests show that the AI struggles with specific input data, then the team can include more layers in the model or use different algorithms such as boosting, yielding better performance.

- **Data Privacy Risks**
  Given that it refers to student's data, the protection should be very strong. Encryption and anonymization will be implemented, as well as auditing to detect and patch vulnerabilities.
  - **Contingency Plan:** In case of a data breach, the team should inform all concerned individuals in a well-planned manner to contain the situation as soon as possible.
  - **Example:** Assuming there is some anomaly in the data access logs, the team would immediately audit the logs, pinpointing the breach, informing where needed, and taking measures to prevent recurrence.

- **Resource Availability**
  We will cross-train team members on major tasks that, if a skill shortage were to occur, would disrupt the team. Specialized tasks may be outsourced, if need be, while maintaining a scheduling buffer that can absorb delays in case of resource gaps.
  - **Contingency Plan:** If key resources become unavailable, we'll use temporary staff or consultants and adjust project timelines for less critical tasks to allow continued progress.
  - **Example:** In case of the lack of an AI specialist, for example, a backup consultant will replace him until such time the main representative returns to work.

- **Budget Overrun**
  A built-in schedule buffer is provided to the team such that high-risk tasks can be adjusted in case of delays. There will be project software to keep you on track and to flag when you're close to running behind so adjustments can be made soon.
  - **Contingency Plan:** However, rather than being taken for granted, the resources from the low-priority areas will be reallocated to fill in any unexpected schedule setbacks, and the project timeline will be adjusted where called for to make sure that high-impact tasks remain on track.
  - **Examples:** If data integration runs behind, the project manager might move staff from other noncritical areas to concentrate on this task to guarantee that most of the main deliverables do not slip behind.

- **Budget Overrun**
  We'll make sure we don't end up with a budget problem by watching all the expenditures closely. We then establish an emergency reserve to cover any unexpected costs, which keeps us flexible and doesn't touch the main budget.
  - **Contingency Plan:** The team will lower non-important spending and cut down on low-impact activities if an overrun is likely to stay well under budget.
  - **Examples:** In case the project will be equipped with additional software tools when they are needed, the reserve part can be used, reducing the amount of lower-priority things like optional training or external consulting hours.

Conclusion:

The risk assessment and mitigation plan provided in this project presents a project structure for identifying, analyzing, and solving critical risks in the AI-based Academic Advisor project. Through proactive risk management, the project team mitigates risk to potential negative impacts, helps maintain project timelines, and improves the likelihood that the project will be completed successfully.

Budgeting and Resource Costing with Outsourcing

Budgeting is the process of estimating and allocating financial resources for a project. It ensures that funds are effectively distributed across all phases, helping to avoid overspending and resource shortfalls. A well-planned budget is crucial for timely project completion, risk management, and achieving desired project outcomes.

The **Delphi method** was combined with research into average outsourcing rates for specialized IT services to provide realistic figures. This method helps incorporate expert consensus via extensive research for potential unknowns, while outsourcing market research ensures costs align with industry standards.

Cost Categories and Resource Costing:

Development and Outsourcing Costs:

1. **AI Model Development (Outsourced)**:
    - **Cost**: $120,000.
    - **Justification**: This cost covers the design, development, and training of custom machine learning algorithms for personalized academic advising. Outsourcing rates for AI development can range from $50 to $150 per hour *[source: Clutch]*.

      A 6-month period project (approximately 1,200-1,500 hours) falls within the $100,000 to $150,000 range.
2. **Software Development (Outsourced)**:
    - **Cost**: $100,000.
    - **Justification**: This includes frontend and backend development for the web/mobile interfaces and system integration. Software development outsourcing typically costs between $40 to $100 per hour *[source: Accelerance]*. The project scope estimates around 1,200 hours for development.

Integration and System Deployment (Outsourced):

3. **Integration with University Systems (SIS/LMS)**:
    - **Cost**: $50,000.
    - **Justification**: This budget covers API development, data pipeline creation, and integration with existing university systems. Specialized integration work can be outsourced at rates between $60 to $120 per hour *[source: GoodFirms]*.

4. **Cloud Infrastructure and Hosting**:
    - **Managed by the Outsourcing Company**.
    - **Cost**: $50,000.
    - **Justification**: The cost for cloud infrastructure management for a year, including AWS or Google Cloud hosting.

Testing and Quality Assurance (Outsourced):

5. **QA Testing**:
    - **Cost**: $25,000.
    - **Justification**: Functional, regression, and user acceptance testing are included. QA outsourcing typically ranges from $30 to $50 per hour *[source: Testlio]*, with around 500-600 hours estimated for thorough testing.

6. **Pilot Program**:
    - **Cost**: $10,000.
    - **Justification**: Conducting a pilot test with a controlled user group and collecting feedback for adjustments.

Training and Support (Outsourced):

7. **Training for Advisors and Students**:
    - **Cost**: $15,000.
    - **Justification**: This includes developing user training materials, manuals, and conducting workshops. The outsourcing company would involve training specialists to ensure smooth user adoption.

8. **Ongoing Technical Support (Year 1)**:
    - **Number of Personnel (equivalent)**: 2 support staff.
    - **Cost**: $40,000.
    - **Justification**: Covers the cost for a year of technical support and maintenance post-launch. Typical support outsourcing ranges from $30,000 to $50,000 annually *[source: Upwork]*.

Marketing and Awareness (Handled Internally with Limited Outsourcing):

9. **Promotion to Students and Advisors**:
    - **Cost**: $20,000.
    - **Justification**: Managed by the main project team with outsourced design services for promotional materials.

Miscellaneous and Compliance (Outsourced):

10. **Data Privacy Compliance**:
    - **Cost**: $15,000.
    - **Justification**: Covers outsourcing to legal consultants to ensure GDPR and FERPA compliance *[source: Nolo]*.

11. **Contingency Budget**:
    - **Cost**: $50,000.
    - **Justification**: Reserved for unforeseen expenses, calculated as approximately 10-15% of the project budget.

Revised Total Estimated Budget with Outsourcing:

- **AI Model Development (Outsourced)**: $120,000.
- **Software Development (Outsourced)**: $100,000.
- **Integration and System Deployment (Outsourced)**: $50,000.
- **Cloud Infrastructure**: $50,000.
- **QA and Testing (Outsourced)**: $25,000.
- **Pilot Program**: $10,000.
- **Training and Support (Outsourced)**: $15,000.
- **Ongoing Technical Support (Year 1)**: $40,000.
- **Marketing and Awareness**: $20,000.
- **Data Privacy Compliance**: $15,000.
- **Contingency**: $50,000.

Total Budget: **$495,000**.

References

1. **Bojanowski, P., Grave, E., Mikolov, T., et al. (2017). Enriching Word Vectors with Subword Information. *Transactions of the Association for Computational Linguistics*, 5, 135–146. https://aclanthology.org/Q17-1010/**
2. **Vaswani, A., Shazeer, N., Parmar, N., et al. (2017). Attention is All You Need. *NeurIPS* 30. https://arxiv.org/abs/1706.03762**
3. **Trotter, A. (2022). The role of artificial intelligence in improving education and student services. *Journal of Educational Technology & Society*. https://www.jstor.org/stable/43112345**
4. Pash, C. (2023). The Ultimate Guide to AWS, Google Cloud, and Azure for Businesses. *TechRadar*. **https://www.techradar.com/**
5. Jones, T. (2022). Cloud Infrastructure Comparison: AWS, Google Cloud, Azure. *Enterprise Networking Planet*. **https://www.networkingplanet.com/**
6. Smith, R., & Sequeira, J. (2021). The Role of Data Scientists in Developing AI Solutions for Education. *AI & Society*, 36(3), 667-684. **https://link.springer.com/article/10.1007/s00146-021-01120**
7. Aggarwal, R., & Bhardwaj, A. (2020). Challenges in AI Implementation in Education. *Journal of Educational Research & Practice*, 10(1), 65-79. **https://www.researchgate.net/publication/345745611**
8. Singh, S., & Verma, R. (2021). Scalability of AI Solutions in Large-Scale Educational Systems. *Journal of Educational Technology*, 32(4), 411-429**. https://doi.org/10.1007/s10272-021-0958-3**
9. Dastin, J. (2022). Maintaining AI Systems for Longevity and Accuracy. *Technology in Education Review*. **https://www.edtechreview.in/**
10. Kohli, P., & Patel, M. (2020). Cost optimization strategies for AI in educational environments. *Journal of Educational Economics*, 44(3), 467-485**. https://doi.org/10.1007/s13131-020-0227-0**
11. Keane, C., & Hamilton, G. (2022). The Economic Feasibility of AI in Education. *Education Technology & Investment Journal*, 11(3), **245-256. https://www.techfeasibilityjournal.com/**
12. Jackson, L. (2021). Educational AI Startups and the Business of Learning. *Global Education Business Insights*. **https://www.gebinsights.com/**
13. Binns, M., & Woods, J. (2022). Navigating the Ethical Challenges in AI-Driven Education. *Ethics and AI Journal*, 8(2), 144-159. **https://www.oxfordacademic.com/**
14. **Accenture** - Leveraging AI and machine learning in predictive analytics to enhance decision-making and customer insights. Accenture, 2023.
15. **Gartner** - Trends in AI-driven solutions for optimizing customer engagement and operational efficiencies. Gartner, 2023.

16. **McKinsey** - The impact of predictive algorithms on improving user satisfaction and service personalization. McKinsey & Company, 2024.
17. **IBM** - Best practices in integrating cloud-based AI solutions for scalable applications. IBM Cloud, 2023.
18. **Forrester** - Strategic approaches to AI-based data integration for enhanced enterprise decision-making. Forrester, 2023.
19. **Microsoft Azure** - Cost-effective solutions and security considerations for cloud AI services. Microsoft Azure, 2023.
20. **Salesforce** - AI-driven automation tools for streamlined workflows and improved productivity. Salesforce, 2022.
21. **PwC** - AI deployment and compliance strategies to meet data privacy regulations. PwC, 2023.
22. **Deloitte** - How AI enhances user experience and operational efficiency in educational technology. Deloitte, 2023.
23. **AWS Machine Learning -** Pricing models and scalability benefits of cloud-based machine learning. AWS, 2023.
24. **World Economic Forum** (2023) - Managing Risks in AI and Machine Learning: Guidelines for data privacy, algorithmic integrity, and compliance in academic institutions.
25. **McKinsey & Company** (2022) - Risk mitigation strategies for AI deployment, focusing on technical and operational risks in software projects.
26. **NIST** - AI risk management framework for understanding and managing privacy and security challenges. Link
27. **Accenture** (2023) - Best practices in data privacy and security for AI-driven solutions, with a focus on compliance and algorithmic risks.
28. **Gartner** - Risk management in AI-based projects, covering technical, operational, and compliance considerations.
29. **Deloitte** - Managing operational and budgetary risks in AI-based projects, including cross-training and contingency planning.
30. **IBM** (2023) - Risk identification and mitigation techniques for integrating AI systems in educational settings, focusing on privacy and data security.
31. **PwC** - Effective budget management and resource allocation strategies for AI-driven projects in higher education.
32. **IEEE Xplore Digital Library** - Studies on algorithmic inefficiencies and integration challenges in AI applications, including predictive systems in academic advising. Link
33. **ISO Standards** - Guidelines for information security and privacy management in AI, relevant for handling academic data. Link
34. **Clutch**. *Average hourly rates for outsourcing AI services*. Retrieved from https://clutch.co.
35. **Accelerance**. *Software development outsourcing pricing*. Retrieved from https://www.accelerance.com.

36. **GoodFirms.** *Rates for specialized integration services*. Retrieved from https://www.goodfirms.co.
37. **AWS Pricing Calculator**. *Cloud infrastructure cost estimates*. Retrieved from https://calculator.aws/#/.
38. **Testlio.** *QA testing outsourcing pricing*. Retrieved from https://testlio.com.
39. **Upwork**. *IT support and technical outsourcing rates*. Retrieved from https://www.upwork.com.
40. **Nolo.** *Data privacy compliance costs*. Retrieved from https://www.nolo.com.