Assignment for the first lecture

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I. AI in Enterprises: A Vision for Integrated Solutions

As a future AI Application Engineer, I aim to integrate AI into businesses to boost efficiency and value, leveraging mathematics, data science, and AI.

- **RAG for Knowledge Access:** Utilize RAG for intelligent enterprise Q&A, applying **linear algebra** and **statistics**. Key data work involves **preprocessing** and **evaluation**. **LLMs** will drive query understanding and response generation.
- **Process & Communication Optimization:** Employ AI to streamline workflows. **Graph theory** and **optimization algorithms** are key mathematically. **Process mining** and **predictive modeling** will be data science tools. **NLP/LLMs** and **machine learning** are core AI applications.
- **Advanced AI Customer Service:** Develop LLM and Multi-Agent System (MAS) based customer service. This involves **reinforcement learning**, **queuing theory**, and **game theory**. Data science will focus on **dialogue analysis** and **monitoring**. **Conversational AI/LLMs** and **MAS** are central.

Addressing challenges like data security is crucial. I believe this integrated approach will significantly benefit enterprises.

II. Undergraduate Information Technology Foundation

My Computer Science degree provided a strong IT foundation.

- **Key Courses:** *Computer Organization*, *Networks*, *Programming (C/Java/Python)*, *Data Structures & Algorithms*, *Operating Systems*, and *Databases* established core knowledge in information handling.
- **Graduation Project - Unity FPS Game:** This project applied learned concepts extensively.
  - **Practical Information Processing:** Involved 3D spatial data, AI pathfinding (complex terrain navigation with NavMesh/ `MeshLink`), physics simulation, game logic, and multimedia integration.
  - **Core Tech Insights:** The AI and physics aspects highlighted the importance of algorithms and mathematics in creating intelligent interactive experiences.

My undergraduate work equipped me with foundational theory and practical problem-solving skills in information science.