**III – F3**

**Approved Research Topics**

These are your working research titles for our Event-Driven Programming course. If you have any questions or concerns, feel free to discuss them in person.

You may now begin your documentation in MRAD format. Remember to keep your research title and content *unique to this course* and *avoid reusing it in other courses* unless for Methods or Capstone projects.

To support your documentation, you are permitted to use the following AI tools:

* *Consensus* and *Research Rabbit*: These tools can assist you in conceptualizing your research by helping you explore relevant studies, understand existing findings, and identify key concepts in your field.

**Please remember:**

* These tools are meant to support your understanding and help refine your ideas—not to create the content itself. Avoid copying and pasting directly from these sources. Instead, use them to gather insights and structure your own interpretations.
* All references should follow APA 7th edition format and be sourced from recent (within the last 5 years) and credible academic or industry sources to enhance the quality of your work.

This approach will ensure that your research documentation is original, thoughtful, and well-supported.

**TITLES:**

**Tupas: Document Text Summarization System**

* **Title**: DocSummarize: Automated Text Summarization Tool for Documents
* **Main Features**:
  + **Text Summarization**: Generates concise summaries of long documents.
  + **Key Points Extraction**: Highlights the main ideas or themes in the text.
  + **Summary Download**: Allows users to download the summary in multiple formats (PDF, DOCX).
* **Technology**: Natural Language Processing (NLP), Transformer Models (BERT, GPT-based)
* **Data**: Large text documents (e.g., academic papers, reports)

**Constantino: OCR-Based Answer Detection System**

* **Title**: AnswerCheck: OCR-Based Examination Answer Detection
* **Main Features**:
  + **Answer Detection**: Uses OCR to recognize and extract answers from scanned sheets.
  + **Grading and Classification**: Automatically grades or classifies answers based on detected responses.
  + **Answer Archive**: Stores processed answers for review and analysis.
* **Technology**: Optical Character Recognition (OCR), Machine Learning
* **Data**: Scanned Answer Sheets

**Balinton: Job Recommendation System Based on Applicant Resumes**

* **Title**: JobFit: Resume-Based Job Recommendation Platform
* **Main Features**:
  + **Resume Parsing and Job Matching**: Matches resumes to job listings based on skills and experience.
  + **Personalized Job Recommendations**: Provides job suggestions aligned with the applicant’s qualifications.
  + **Resume Analysis**: Offers feedback on resume content to improve matching.
* **Technology**: NLP, Machine Learning, Recommendation Algorithms
* **Data**: Applicant Resumes, Job Descriptions

**Castillo: Applicant Recommendation System Based on Job Posts**

* **Title**: TalentMatch: Job Post-Based Applicant Recommendation System
* **Main Features**:
  + **Job Posting Analysis**: Analyzes job requirements and descriptions.
  + **Applicant Matching**: Recommends applicants best suited for each job based on profiles.
  + **Fit Score Visualization**: Displays match scores between applicants and job posts.
* **Technology**: NLP, Machine Learning, Data Analytics
* **Data**: Job Postings, Applicant Profiles

**Icalla: Meat Quality Detection System**

* **Title**: MeatCheck: Image-Based Meat Quality Detection Tool
* **Main Features**:
  + **Quality Detection Page**: Uses image analysis to assess meat quality based on visual features.
  + **Quality Classification**: Labels meat as “Fresh,” “Average,” or “Poor.”
  + **Storage Tips and Quality Guide**: Provides information on handling and storage for quality maintenance.
* **Technology**: Computer Vision, Machine Learning (Image Classification)
* **Data**: Meat Images with Quality Labels

**Maranan: Prescription Classification System**

* **Title**: RxScan: Automated Prescription Classification Tool
* **Main Features**:
  + **Prescription Image Analysis**: Reads and classifies prescriptions based on medication names and instructions.
  + **Drug Interaction Alerts**: Identifies and flags potential drug interactions from detected medicines.
  + **Prescription History Logs**: Keeps track of classified prescriptions with timestamps.
* **Technology**: OCR, Computer Vision, Image Processing
* **Data**: Prescription Images, Drug Interaction Database

**Manalo: Skin Disease Detection System**

* **Title**: DermDetect: Skin Disease Classification and Detection System
* **Main Features**:
  + **Disease Classification Page**: Uses image input to identify skin conditions.
  + **Detailed Disease Information**: Provides information on symptoms, treatment options, and preventive measures.
  + **Detection History Logs**: Records all classifications with image and timestamp.
* **Technology**: Machine Learning, Computer Vision, TensorFlow or Keras
* **Data**: Skin Disease Images, Disease Labels and Descriptions

**Abregante: Sentiment Analysis on Books with Age Restriction**

* **Title**: BookSense: Age-Appropriate Sentiment Analysis for Literature
* **Main Features**:
  + **Sentiment Analysis**: Analyzes book content for sentiment and age-appropriate themes.
  + **Age Restriction Classification**: Flags content based on suitability for different age groups.
  + **Content Summary and Insights**: Provides a summary of sentiment trends in each book.
* **Technology**: NLP, Sentiment Analysis, Transformer Models
* **Data**: Text of Books, Age Suitability Labels

**Landicho: Fruit Classification System**

* **Title**: AgroClassify: Fruit Identification and Regional Information Tool
* **Main Features**:
  + **Fruit Classification Page**: Identifies fruit type from images.
  + **Regional Information**: Displays details on provinces where the fruit is commonly grown.
  + **Price Estimation Tool**: Provides price range information for each classified fruit.
* **Technology**: Machine Learning (Image Classification), Data Analytics
* **Data**: Fruit Images, Provincial Data, Price Information

**Title Page**

* Research Title
* Author’s Name(s) and Affiliation
* Date of Submission
* Course and Instructor’s Name

**Abstract**

* Brief summary of the research, including objectives, methodology, key findings, and conclusions.
* Typically around 150-250 words.

**1. Introduction**

* **Background**: Introduce the topic and provide context.
* **Problem Statement**: Clearly define the problem your research addresses.
* **Objectives**: Outline the specific aims or goals of the study.
* **Scope and Limitations**: Define the boundaries of the research and any limitations.
* **Significance of the Study**: Explain the study's relevance and potential contributions.

**2. Methodology**

* **Research Design**: Describe the type of research (e.g., experimental, observational).
* **Data Collection**: Outline the sources and methods used to collect data (e.g., surveys, sensors, images).
* **Tools and Instruments**: List the tools, technologies, or software used (e.g., machine learning models, sensors).
* **Procedures**: Provide a step-by-step explanation of how the research was conducted.
* **Data Analysis**: Describe how data was processed and analyzed, including any statistical or computational techniques.

**3. Results**

* **Presentation of Data**: Include graphs, tables, or charts to illustrate findings.
* **Key Findings**: Summarize the main results of the study without interpretation.
* **Observations**: Highlight any patterns, trends, or unexpected results.

**4. Analysis**

* **Interpretation of Results**: Explain what the results mean in relation to the research objectives.
* **Comparative Analysis**: Compare your findings with those from other studies or expected outcomes.
* **Relevance to Problem Statement**: Discuss how your findings address the original problem.

**5. Discussion**

* **Implications of Findings**: Describe the impact of the results on the field and potential applications.
* **Limitations**: Identify any limitations that may affect the validity or generalizability of the results.
* **Recommendations**: Suggest actions for further research, improvement, or practical application.

**6. Conclusion**

* **Summary of Findings**: Briefly restate the research problem, methods, and key results.
* **Concluding Remarks**: Discuss the significance of the research and its potential for future study.

**7. References**

* List all sources used, formatted according to APA 7th edition, with recent (within the last 5 years) and credible academic or industry references.

**8. Appendices (if applicable)**

* Supplementary materials such as raw data, additional charts, detailed methodologies, or other relevant documents.

**Weekly MRAD Documentation Check Schedule**

**Week 1: Initial Setup and Introduction**

* **Objectives**:
  + Review the **Title Page** for completeness (title, author names, date, course).
  + Ensure the **Introduction** includes:
    - Background and context
    - Problem statement
    - Clear research objectives
    - Defined scope and limitations
    - Significance of the study
* **Deliverables for Submission**: Completed Title Page and draft of the Introduction.

**Week 2: Methodology Draft**

* **Objectives**:
  + Check for a well-defined **Research Design**.
  + Review details on **Data Collection** methods and **Tools/Technologies** used.
  + Ensure the **Procedures** section outlines step-by-step actions taken.
  + Verify initial outline for **Data Analysis** techniques.
* **Deliverables for Submission**: Draft of the complete Methodology section.

**Week 3: Initial Results and Data Visualization**

* **Objectives**:
  + Review **Presentation of Data** with initial graphs, tables, or charts.
  + Check **Key Findings** and ensure they are presented without interpretation.
  + Ensure **Observations** are outlined to highlight patterns or trends.
* **Deliverables for Submission**: Draft of Results section, with data visualizations as applicable.

**Week 4: Analysis and Interpretation of Findings**

* **Objectives**:
  + Check **Interpretation of Results** to ensure they align with research objectives.
  + Review any **Comparative Analysis** for accuracy and relevance.
  + Confirm connection of findings back to the **Problem Statement**.
* **Deliverables for Submission**: Draft of the Analysis section, ensuring logical coherence and supported interpretations.

**Week 5: Discussion, Conclusion, and References**

* **Objectives**:
  + Review **Discussion** section for implications, limitations, and recommendations.
  + Ensure the **Conclusion** summarizes findings effectively and highlights key insights.
  + Verify all **References** are formatted according to APA 7th edition and meet recency requirements.
  + Review any **Appendices** for completeness (if applicable).
* **Deliverables for Submission**: Finalized Discussion, Conclusion, References, and any Appendices.