



Text Pixs

[Text to Image]



FYP Proposal

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Internal Supervisor

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Hamdard University

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Group Introduction

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Group Members

- ❑ Syeda Anshrah Gillani
- ❑ Umema Mujeeb
- ❑ Maheen Ali

Internal Supervisor: Sir Osama Ahmed Khan

❑ **Why did we select him as supervisor?**

I chose him because of his deep knowledge of software development and experience in guiding successful research projects.

❑ **Relevant Expertise**

He has experience in a similar domain and industry project which is related to our project.

❑ **Relevant Experience**

He has 10+ years of prolific experience in academia and IT industry.



Group Introduction

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Group Members

- ❑ Syeda Anshrah Gillani
- ❑ Umema Mujeeb
- ❑ Maheen Ali



External Supervisor: Mirza Samad Ahmed Baig

❑ **Why did we select him as supervisor?**

We selected him because of his profound expertise in artificial intelligence and generative models, combined with his proven ability to guide research projects to successful completion.

❑ **Relevant Expertise**

He has experience in a similar domain and industry project which is related to our project.

❑ **Relevant Experience**

He has 1+ years of prolific experience in academia and the AI industry.

Problem Statement

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“Text-to-image generation challenges AI with accurately translating text into realistic visuals. Current methods struggle with nuanced semantics and visual fidelity. "Text Pixs" aims to pioneer RC-GAN, integrating NLP and computer vision to advance image synthesis quality, impacting content creation, education, and virtual reality.”

Project Objectives

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- ❑ Develop a **Recurrent Convolutional Generative Adversarial Network (RC-GAN)** to improve the fidelity and accuracy of generating images from textual descriptions.
- ❑ Address the limitations of current text-to-image generation methods in **capturing semantic nuances and producing high-quality visual outputs**.
- ❑ Conduct **empirical evaluations to assess the performance** of RC-GAN across diverse datasets and application scenarios.
- ❑ **Enhance the utility of AI** in content creation, education, and virtual reality through advanced text-to-image synthesis capabilities.



Project Scope

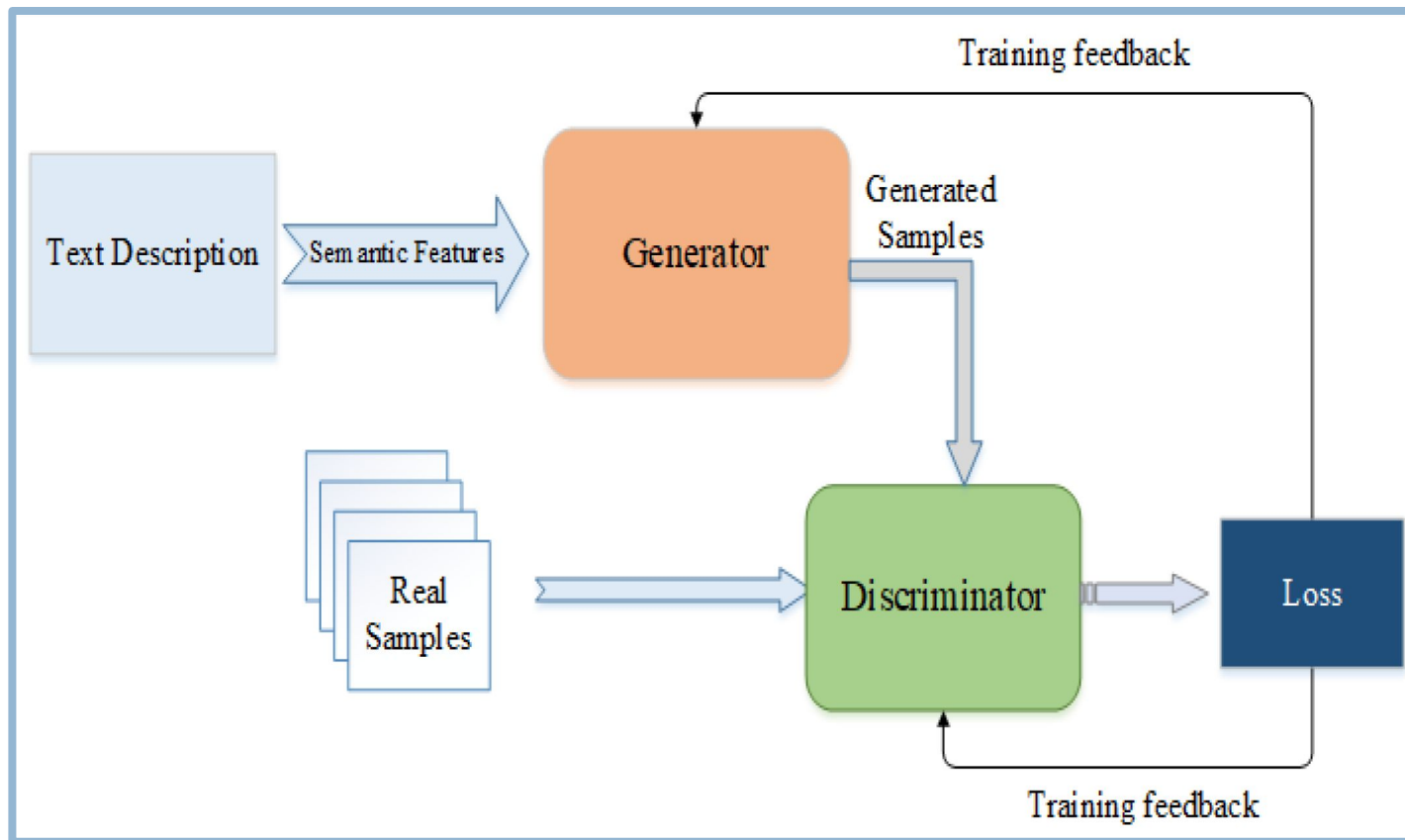
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“The scope of the project "Text Pixs" involves developing and evaluating a Recurrent Convolutional Generative Adversarial Network (RC-GAN) tailored for text-to-image generation. This initiative aims to address existing challenges in accurately translating textual descriptions into visually realistic images by leveraging advancements in natural language processing (NLP) and computer vision. By focusing on improving the fidelity and semantic coherence of generated images, "Text Pixs" seeks to advance the capabilities of AI in enhancing visual content synthesis and application across various domains.”



Architecture Big Picture

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Project Management Methodology



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- The Agile Scrum methodology is ideally suited for the "Text Pixs" project, aiming to advance text-to-image generation technology.

WHY?

- Agile Scrum is chosen because it facilitates flexibility, iterative development, and continuous feedback loops, which are essential for refining the Recurrent Convolutional Generative Adversarial Network (RC-GAN). The project involves diverse tasks such as data preprocessing, model refinement, and performance evaluation, each requiring focused development cycles. By breaking down these tasks into manageable sprints, the team can prioritize effectively and adjust strategies based on evolving requirements and feedback. This iterative approach ensures that the RC-GAN model can evolve dynamically, meeting the project's goals of enhancing image fidelity and semantic accuracy.

Project Role & Responsibilities



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Project Deliverable Activity	Supervisors	Syeda Anshrah Gillani	Umema Mujeeb	Maheen Ali
Literature Review	C, I	A, R	I	I
PRD, User stories	C, A	R, A	C, I	C, I
Data Collection & Preprocessing	C, I	C, I	R	R
AI Model Development / Fine-Tuning	C, I	R, A	R, I	R, I
FE & BE Development	C, I	I, A	R	R
Final Version Release & Production Deployment	C, I	R, A	I, R	I, R
FYP Report	C, A	R, A	R, I	R, I

Project Milestones

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- Project Initiation and Planning
- Literature Review and Research
- Data Collection and Preprocessing
- Model Development and Training
- Evaluation and Optimization
- Prototype Development
- Optimization and Scaling
- Documentation and Reporting
- Project Review and Finalization

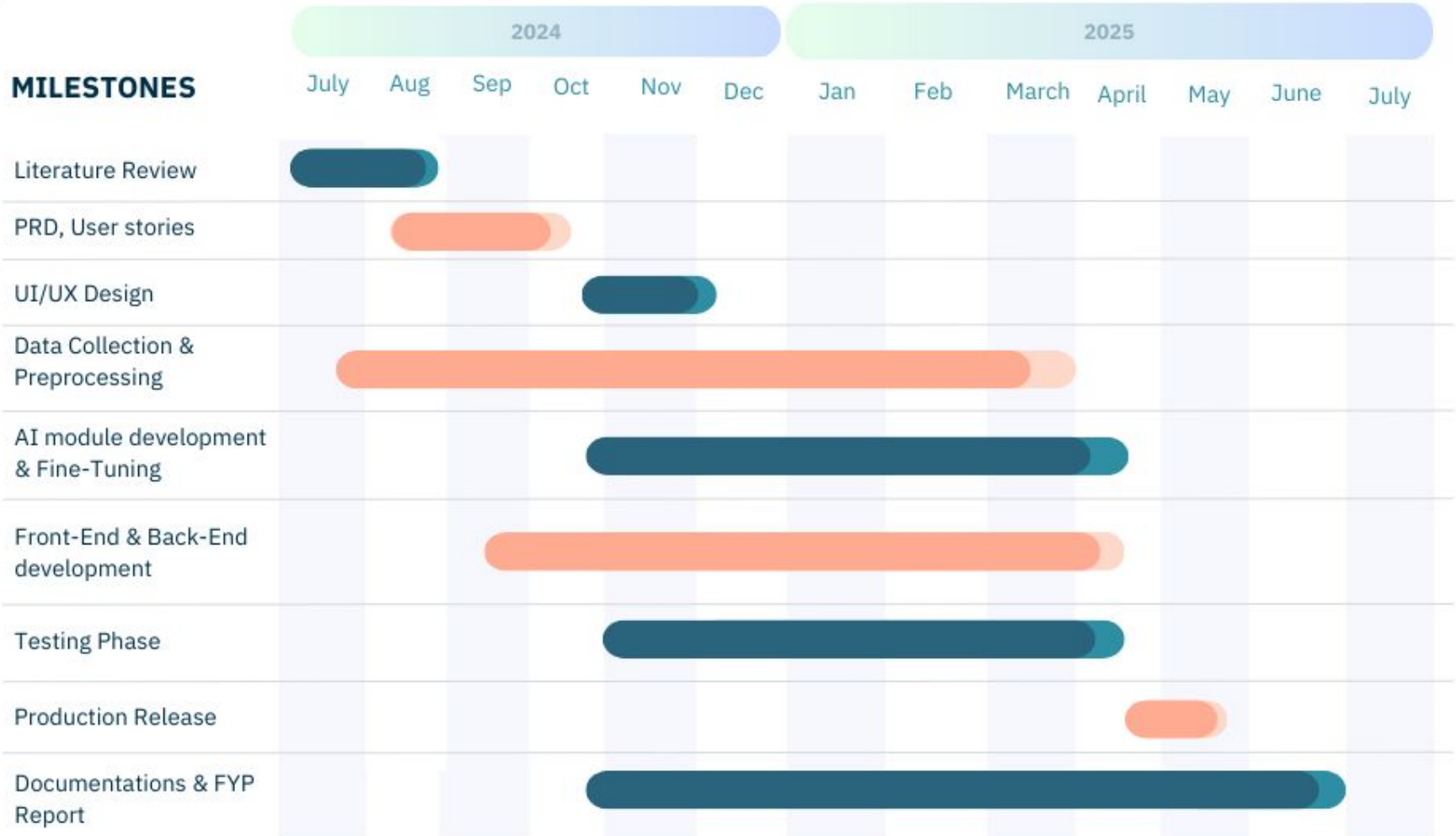


Text Pixs

GANTT CHART

2-WEEK SPRINTS FOR ITERATIVE PROGRESS ON DELIVERABLES

MILESTONES



Project Budgeting

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- **Cloud GPU Cost Detail:**
 - **Nebius H100 SXM 5 GPU:** \$3.15 per hour
 - **Estimated Usage:** 500 - 1,000 hours
 - **Cost Range:** \$1,575 - \$3,150
- **Total Cost: \$4,675 - \$11,700**



Category	Item	Estimated Cost
Hardware and Software	High-Performance Laptop/Desktop	\$1,200 - \$2,500
	Dedicated GPU	\$800 - \$2,500
	Cloud Computing Credits	\$1,575 - \$3,150
	Software Licenses	\$200 - \$400
	Storage Devices	\$100 - \$300
	Dataset Acquisition	\$100 - \$500
Data and Resources	Data Annotation	\$200 - \$600
	Research Materials	\$50 - \$150
Team and Development	Conference and Workshop Fees	\$100 - \$300
	Printing and Stationery	\$50 - \$100
Miscellaneous	Travel Expenses	\$100 - \$300
	Contingency	\$200 - \$400
Total		\$4,675 - \$11,700

Project Tools

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Software Requirements

- ❑ Python
- ❑ TensorFlow/ PyTorch
- ❑ NLP libraries (e.g., Hugging Face Transformers)
- ❑ Figma
- ❑ GAN frameworks.

Hardware Requirements

- ❑ High-End Laptop (16GB RAM)
- ❑ High-performance GPU (H100)
- ❑ Cloud computing platforms (e.g., AWS, Google Cloud).



8- Project Deliverables



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FYP-I Evaluation

- ✓ Project Proposal and Scope
- ✓ Definition Literature
- ✓ Review Requirement
- ✓ Analysis Initial System
- ✓ Design Dataset Collection and Preprocessing
- ✓ Model Selection and Initial Development
- ✓ Progress Report
- ✓ Prototype Demonstration
- ✓ Feedback Incorporation

FYP-II Evaluation

- ✓ Enhanced System Development
- ✓ Evaluation and Testing
- ✓ User Interface Development
- ✓ Final Integration and Deployment Plan
- ✓ Final Report
- ✓ Poster and Video Presentation
- ✓ Final Demonstration
- ✓ Feedback and Refinement
- ✓ Project Handover

THANK YOU!

