

Project Title: Agentic Framework for Extracting Causal Career Roadmaps

Project Description: This research project focuses on developing an agentic AI framework that extracts structured, causal career roadmaps from qualitative interviews. The goal is to design intelligent agents that can conduct dynamic interviews, identify key decision points, uncover causal relationships between milestones, and construct structured roadmap representations from unstructured dialogue. The project lies at the intersection of:

- Large Language Models (LLMs)
- Agentic systems
- Dialogue modeling
- Causal reasoning
- Human-AI interaction

Project Type: Research

Internship Batch: Batch 1: May 10 to July 9, suitable for Education City students, i.e., CMUQ, TAMUQ and HBKU students

Duties/Activities:

- **Data Collection & Curation:** Collect and structure career roadmaps from successful alumni at your university through qualitative interviews.
- **User Simulator Design:** Design and implement a configurable user simulator capable of sharing career trajectories in diverse dialog styles and personality types.
- **Agentic Interview Framework:** Develop and implement an interviewer agent that:
 - Conducts adaptive interviews
 - Extracts key milestones and decisions
 - Identifies causal dependencies
 - Constructs structured causal roadmap representations
- **Evaluation & Analysis**
Design evaluation metrics to assess the quality, completeness, and consistency of extracted roadmaps.

Required Skills:

- Strong programming skills (Python preferred)
- Experience working with Large Language Models (prompting, APIs, or fine-tuning)
- Familiarity with basic machine learning concepts

Preferred Intern Academic Level: Junior, Senior undergraduate or Master student

Learning Opportunities:

- Interns will gain hands-on experience in:
 - Designing agentic AI systems
 - Structured information extraction from dialogue
 - Causal reasoning modeling
 - LLM-based system development
 - Research methodology and experimental evaluation
- High-performing interns may contribute to:
 - A conference paper submission

Expected Team Size: Up to 5 interns (team-based projects encouraged)

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