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Smart Summarisation of Movie Plots: A Multi-Agent System for Generating Engaging and Spoiler-Free Synopses

Abstract: The explosion in digital media has heightened the demand for automated systems that can generate concise, engaging, and spoiler-free summaries of movie plots. Traditional summarisation methods often struggle to strike a balance between informativeness and spoiler avoidance, thus impacting the viewer's experience. This paper introduces an advanced multi-agent system powered by large language models (LLMs) to produce spoiler-free captivating synopses of movie plots.

Our system features three specialised agents: a Content Extraction Agent, a Spoiler Detection Agent, and a Synopsis Generation Agent. The Content Extraction Agent leverages the language understanding capabilities of LLMs to identify central themes, narrative arcs, and turning points in movie scripts and detailed plot descriptions. The spoiler-detection agent, employing a classifier trained on recent spoiler-detection techniques, filters out critical plot points that could compromise the viewer's experience. The Synopsis Generation Agent then synthesises the filtered content into a coherent and engaging narrative, preserving the essence of the original story while strategically omitting spoilers.

We evaluated the system on the MovieSum and DiscoGraMS datasets, covering a diverse range of genres, and compared its performance with that of state-of-the-art summarisation models. Results from quantitative metrics, including ROUGE, PRISMA, and METEOR scores, along with qualitative human assessments, indicate that our approach significantly outperforms the existing methods in producing both engaging and spoiler-free summaries. This study underscores the value of integrating LLMs within a multi-agent framework to tackle complex summarisation tasks, and highlights potential applications in media, digital content, and beyond.

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Biography: Tewogbade Shakir Adeyemi is a Data Scientist and researcher with over four years of experience in data analysis, predictive modelling, and pricing optimization. Holding a distinguished MSc in Big Data Science and Technology from the University of Bradford, Shakir applies his comprehensive technical expertise to develop machine learning models that optimise decision-making processes and operational efficiency. His proficiency spans Python, SQL, SPSS, Power BI, and Tableau. As the current Data Science Team Lead at Cape Economic Research & Consulting in the United States, Shakir directs model development and forecasting initiatives. He steers his team towards creating potent data-driven solutions that harmonise with the commercial aspirations of their clientele.

Shakir's research interests lie in FinTech adoption, machine learning, and defect detection in manufacturing, with published works in relevant journals. He is committed to community engagement, volunteering with organisations such as the British Heart Foundation, and actively contributes to the data science community through GitHub and Medium. His expertise spans machine learning (classification, regression, time series), predictive analytics, and advanced statistical modelling, making him a well-rounded and impactful leader in the field.