Cultural Heritage Conveyed in Official City's Instagram Posts

Key Words: Cultural Heritage Research | Quantitative | Instagram | AI | Prompt

Cultural heritage is often studied through qualitative methods; however, this project aims to take a different approach, utilizing artificial intelligence to quantify the representation of cultural heritage in city-run Instagram accounts. Assistant Professor Lénia Marques and Dr Jay Lee from Erasmus School of History, Culture and Communication (ESHCC) initiated this international project in collaboration with the University of Jyväskylä in Finland and Sinop University in Turkey. Its goal is to explore how cities like Amsterdam, Helsinki, and Lisbon communicate cultural heritage through social media. This can be on food, architecture, UNESCO-recognized elements, or cultural landmarks. With over 19,000 images from city accounts posted since 2015, the project aims to identify and categorize themes related to tangible and intangible heritage, creating a foundation for data-driven cultural research.

Erasmus Data Collaboratory | House of AI Support

The researcher turned to EDC for help handling the scale and complexity of this task. Traditional AI solutions were out of reach, either because of high costs or because they required advanced coding expertise. One of the data scientists at EDC's data lab offered consulting and technical support to enable this research. He developed a cost-effective workflow using OpenAI's asynchronous API, the programmatic interface of OpenAI. This means developer's code can directly talk to OpenAI's systems. This interface allows automated, bulk data processing in the background to save time and reduce costs. By packaging image data and prompts into batch

requests, the project reduced computing costs by over 50% while preserving high data quality. EDC also supported the project through prompt engineering and automation strategies without the need for expensive tools or time-consuming manual work.

Impact

EDC's technical support was instrumental in launching this cultural heritage research project. The collaboration also established a strong foundation for future research that adopts a quantitative approach to cultural analysis. It opens new avenues for exploring digital heritage narratives and highlights how cultural insight can be combined with scalable AI technologies to drive impactful research. By saving time, reducing costs, and producing high-quality data, EDC helped bridge the gap between humanities research and cutting-edge technology, bringing powerful, accessible tools to researchers who might otherwise not have access to them.

Stakeholders: Lénia Marques | Dr Jay Lee| Erasmus School of History, Culture and Communication (ESHCC) | University of Jyväskylä | Sinop University
Tech/Tools used: OpenAI | Asynchronous API | Batch Processing
Specific EDC expertise used: Asynchronous Processing | Prompt Engineering | Automation Strategy

Testimonial of researcher Vinh Phan: *"The collaboration with the EDC was very fruitful and efficient. There were discussions on the best way to use tools to analyse a big set of data within a short timeframe and very limited budget. The EDC collaborator provided support along the way, looking for solutions for any obstacles. The research team is very happy with the results and has material to work further."*