Echoes of Athens: Bringing Advances in AI/ML to Ancient Greek Papyrology

With the widespread proliferation of artificial intelligence (AI), many fields are rapidly evolving to incorporate these tools into their workflow. One of these fields is digital humanities, a hybrid discipline which sits at the intersection of the humanities and computer science. Unfortunately, many of the tools created by researchers in this hybrid domain are inaccessible to the majority of pure humanities scholars who are almost always non-experts in AI. Consequently, these tools which could drastically improve their productivity and research throughput go unutilized, sitting idly in a sea of GitHub repositories.

With these issues in mind, this talk will share our vision for an AI-assisted future for the digital humanities, with an emphasis on ancient Greek papyrology. We will present several models and pipelines that have been developed to solve tasks such as handwritten text recognition (HTR), paleographic dating, and synthetic character image generation. We will also discuss current research efforts involving multi-lingual and multi-medium HTR, higher-resolution dating, and document restoration and analysis with natural language processing (NLP). Looking ahead, our goal is to create an accessible AI toolkit tailored for humanists, providing them with intuitive applications that will enhance their efficiency.

About Dr. Graham West

Dr. Graham West joined the School of Applied Computation Sciences as an assistant professor of computer science and data science in July of 2024. His research focuses on applying machine learning methods in the digital humanities. Dr. West's doctoral dissertation "On fitting the morphology of simulations of interacting galaxies to synthetic data" focused on developing optimization methods to model and fit simulations of interacting galaxies to synthetic and observational data. After graduating magna cum laude, Dr. West joined the Ancient Lives project, a team of data scientists and humanities scholars aiming to bring advances in machine learning to ancient Greek papyrology. Specifically, his work has consisted of developing deep learning models to perform handwritten text recognition and dating of papyrus fragments.

As a data science educator who is passionate about both the field and his students, Dr. West's objective is to equip students with the skills, knowledge, and experience they need to succeed in the ever-evolving landscape of data science. His approach to teaching emphasizes both the theoretical and practical aspects of the field, fostering a research mindset in students, and being available and accommodating to them in whatever ways he can. Outside the classroom, Dr. West is a multi-instrumentalist and composer, a film buff, and a lover of philosophy and religion.