

Cover Letter - Northeastern University - Human Centred-AI

I am currently a PhD student working with Dr Emily Wall at Emory University's Cognition and Vision Lab. My current research focuses on personal informatics and how we can leverage visualisation to allow users to gain valuable insights into their behaviour, in particular working with music listening history. In particular I have been focusing on how more casual users can take advantage of large amounts of passively recorded data that companies store and process about them across multiple domains.

As I continue with my research projects I am really interested in incorporating AI techniques in the field of personal informatics. Through the qualitative interview work and survey analysis that I have performed through my most recent research work a key focal point for users has been understanding how better recommendations can be made to them based on their past behaviour. I believe this is a perfect opportunity to work with AI techniques to garner more meaningful recommendations. A current pain point for many users is that the algorithmic recommendations for users are typically very opaque and do not explain why a user might enjoy a recommendation. I think there is a big opportunity for work in AI explainability across a wide breadth of users of differing expertise to understand how the outputs of AI approaches such as recommendation engines or LLM outputs can be more clearly communicated to consumers.

I am especially interested in the aspect of this internship that discusses 'characterising the impacts of AI-generated outputs on human cognition and behaviour.' Through the lens of my current research I think understanding how users engage with and interact with AI - generated outputs is key to improving their efficacy and fostering users' engagement with them and ultimately allowing for a more complete cycle of interaction. I understand that this work is perhaps more focused towards AI in a work setting and I would love the opportunity to explore how users are interacting with AI techniques in a broad range of settings to investigate how this also potentially influences users desire to engage with AI-generated output.

I have completed multiple projects which have involved empirical research with human users including collecting crowd-sourced surveys and performing both quantitative analysis of likert-style responses as well as large scale qualitative analysis of open-text responses. This qualitative analysis involved open coding, thematic analysis, and building complex information spaces that characterised the behaviour of different types of users through their interactions with data. Prior to my current research on personal informatics I also led a qualitative interview study that investigated how professional software developers interacted with distributed tracing systems. This involved multiple semi-structured interviews and open-coding of these responses. Furthermore, I am proficient in iterative design approaches having built multiple tools for data exploration ([music listening](#), [facebook messaging](#)) utilising sketches and figma to design prototypes before implementing visualisations using d3.js and raw javascript. I also have extensive coding experience in Java, Python and other languages and have worked with Machine Learning output through class projects in [genre classification](#), and a personal project to explore integrating sentiment classification into a [journaling tool](#).

I firmly believe that AI techniques have the possibility to enrich people's lives across myriad domains and one of the key barriers to this currently is a lack of understanding from many users that is fueled by a lack of transparency of most AI - generated output. I would love the opportunity to work on research in this space to understand more about humans (of varying technical abilities) can collaborate with AI techniques and how we can design better output from systems to better foster this collaboration.

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