



## SKILLS &

## RESEARCH INTERESTS

Python & Java, SQL & NoSQL, SE Paradigms & Tools (Spring, Maven/Gradle, Git), Data Analysis/Mining (Pandas & NumPy), Machine Learning (Scikit-Learn, Keras/Tensorflow (some), XGBoost), Cloud Computing (GCP, AWS, Azure), Quantitative & Qualitative User Research

Data Science, Human-Computer Interaction, and Recommender Systems

## EDUCATION

University of Manchester (BBC R&D Sponsored), PhD, Computer Science

Manchester, UK | September 2017 – September 2021 | Weekdays are split between BBC R&D and University of Manchester

Theme: Investigating how user interactions (such as clicks, keystrokes, and touch gestures) can be modelled, through Machine Learning/Data Science techniques, to garner an understanding of the user's experience with online and broadcast media.

Current Work: Exploring data (quantitative: 700k+ users and 20 million+ interactions, and qualitative: engagement survey responses) to discover predictive features of engagement and abandonment from multiple media experiences (released nationwide).

Application: 1) To have a positive impact on the user's experience while consuming BBC content; 2) To inform the content creators through data-driven recommendations; 3) To provide the BBC with an in-depth picture of the user's experience through understandable metrics.

Newcastle University, Master of Computing, Computer Science

Newcastle, UK | Grade: 1st class | September 2013 – July 2017

## EXPERIENCE

Lead Teaching Assistant & Teaching Assistant

University of Manchester, School of Computer Science | January 2018 – Present

- Lead a team of 19 graduate teaching assistants to provide practical assistance to 250+ first-year undergraduate students learning Java. Nominated as university-wide 'Best Graduate TA 17/18' by students while in this role. (Lead Teaching Assistant)
- Graded assignments and provided assistant for the following taught units: Foundations of Machine Learning (PG), Machine Learning & Optimisation (UG), Data Engineering (PG), Chip Multiprocessors (UG), and Modern Information Engineering (PG). (Teaching Assistant)

Research Assistant

Newcastle University, School of Computer Science | May 2017 – July 2017

- Created an automated social network to provide ground truth in the evaluation of a user ranking algorithm produced in my master's project
- Formed the continuation of a collaboration between Newcastle University and Pontifical Catholic University of Rio de Janeiro (PUC-RIO), including a week-long sprint visit to PUC-RIO

Research Intern

Newcastle University, School of Computer Science | Summer 2016

- Investigated if behavioural patterns and topic detection on social media accounts could assist in controlling access to restricted areas of a building

## RESEARCH ACTIVITIES

Peer-Reviewed Publications

- Carlton, J., Brown, A., Jay, C., Keane, J. Inferring User Engagement from Interaction Data. *Extended Abstracts of the 2019 CHI Conference on Human Factors in Computing Systems*. ACM, 2019.
- Carlton, J., Woodcock J., Brown, A., Jay, C., Keane, J. Identifying Latent Indicators of Technical Difficulties from Interaction Data. *ACM SIGKDD Workshop on Data Science, Journalism, and Media (DSJM 2018)*, ACM, 2018.
- Carlton, J., Brown, A., Keane, J., Jay, C. Using Low-Level Interaction Data to Explore User Behaviour in Interactive-Media Experiences. *11<sup>th</sup> International Conference on Methods and Techniques in Behavioural Research*.
- Missier, P., McClean, C., Carlton, J., et. al. Recruiting from the Network: Discovering Twitter Users Who Can Help Combat Zika Epidemics. *In 17<sup>th</sup> International Conference on Web Engineering (ICWE 2017)*. Springer, Cham.

Misc. Activities

- Reviewer: CHI'20, CHI'19, ICWE'17
- Attended ACM RecSys Summer School on Recommender Systems, September 9 – 13, 2019, in Gothenburg, Sweden
- Student Volunteer at ACM SIGIR'19 and ACM TVX'19
- Co-supervisor of a BBC R&D Intern working on data visualisation for interaction data (3 months)

## INTERESTS

- Avid Star Wars fan: attended Celebration Europe (2016) event and scheduled to attend Celebration 2020 in Anaheim, California
- Enthusiastic MMA fan: routinely watch level events both on TV and in person
- Concert-goer: regularly attend live music events and try to see my favourite bands whenever they tour
- Bibliophile: passionate collector of science-related and comic books