Brittany I. Davidson

bid23@bath.ac.uk | brittanydavidson.co.uk | @BritDavidson | +447824594830 | Artist | Writer

Current Appointments & Affiliations

University of Bath, Bath (May 2023 –)
Associate Professor in Analytics, School of Management.
- Information, Decisions, and Operations Division.
- Impact Assessment Group member
- Digital and Data Science Research Ethics Committee member (2023-)
- Social Sciences Research Ethics Committee member (2020-2023)
- Security Research Ethics Committee member (2020-)

University of Bristol, Bristol (Sept 2020 – 2023)
Honorary Lecturer in Digital Health, Department of Engineering.

SPRITE+ Expert Fellow (2019—)
- EPSRC-funded Digital Economy Network Plus.
- A network addressing challenges with digital trust, identity, privacy, and security.

Previous Appointments

University of Bath, Bath (Sept 2020 – May 2023)
Assistant Professor in Analytics, School of Management.

Nova Systems International (Feb 2022 – Feb 2023) [.6FTE Secondment]
Head of Digital Technologies Development
Data Science Consultant
- Leading the development of all new technologies for the UK and global company
- Developing future technology and AI strategy for the global company

Let's Think, UK (2022 – 2023)
Chief Data Scientist [voluntary]
- Designing market research
- Producing all data analytics for the company based on research
- Securing funding for prototype development

University of Bristol, Bristol (May 2020 – Sept 2020)
Research Associate in Digital Health Engineering, Faculty of Engineering.
- Digital Health & Primary Care Group.
- Mixed methodological approaches to understanding health disparities in online mental health services in UK young adults working with Kooth & XenZone.

University of Bristol, Bristol (Jul 2019 – May 2020)
Research Associate in the Department of Computer Science.
- Bristol Cyber Security Group.
- Large-scale modelling of cyber-criminal behaviour.

Lancaster University, Lancaster (Jan – Mar 2019)
Research Assistant, Department of Psychology.
- Data analyst for Behavioural Analytic Tools to Improve Financial Planning.
- Co-wrote the IAA grant with Dr David A. Ellis to fund this post (£6,000).

The Cabinet Office, Whitehall, London (May – Jul 2018)
Policy Advisor.
- Worked on various Innovation, Emerging Technology, and NHS Digital projects.

Lloyds Banking Group, Edinburgh (Jun – Sep 2015)

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Channel Analyst – [Digital Banking: Commercial Services Management].
- Developed the forward-facing strategy of 2016 and new tools for further strategies.
- Researched and analysed current processes and developed improvements and changes to ensure the best experience for clients.
- Offered full-time IT Graduate job.

Lloyds Banking Group, Edinburgh (Jun – Sep 2014)
Assistant Manager – [Risk: Global Non-Core – Ireland].
- Managed incidents and followed them to remediation.
- Managed risk events (affecting 20+ people or had a £10k loss minimum) creating solutions and analysing the issues (exceeding all objectives of my internship).

Education

University of Bath (Oct 2016 – Jun 2019)
- Fully funded PhD position in Behavioural Science and Cyber-Security.
- Associated researcher for the Centre for Research and Evidence of Security Threats (CREST).
- Second-fastest PhD student to complete in the school's history.

University of Essex (Jul – Aug 2017)
- Big Data and Analytics Summer School.

University of Amsterdam (Jan 2017)
- Digital Methods Initiative Winter School 2017 on Data Infrastructure.

University of Edinburgh (2012 – 2016)
- MA (Hons) Business with Marketing with First Class Honours.

University of Westminster (2011 – 2012)
- Certificate of Higher Education in Biochemistry. Distinction in Chemistry; Merit overall.

Grant Awards

2023
- Sentiment Analysis 2.0 (2023-2025) – [**NCSC**; ~£250,000]
  - Co-PIs: **BID** and JH

2022
- Development and validation of the Social Media Experience measure: Using objective assessment and adolescents' experience to inform its development (2022-2025) – [**UKRI MRC**; >£1M]
  - PI: MP; Co-I: **BID**, LB, PQ, NH, OD, NJ
- Sentiment Analysis Reviews (2022/23) – [**NCSC**; ~£120,000]
  - PI: **BID**; Co-I: JH

2021
- Bias in Computational Social Science (CCS) (2021) – [**Dstl & ATI**; ~£150,000]
  - PI: SN, Co-I: **BID**, RB
  - Scoping review on CCS and review of current algorithms regarding bias and ethics
- Does mental health symptomology have a role in time distortion? [**UoBath**; £1,900]
  - PI: **BID**
  - Collect currently the largest smartphone screen time dataset (N>1,000) and conduct RSA analysis to understand time distortions and the influence of mental health symptomology
- Phishtray (2021) [**CPNI; £30,000**]
  - PI: **BID,** Co-I: ANJ

     o Finish deployable prototypes of Phishtray (phishing training software) and deploy across CNIs

2020
- Social Psychology of Online Behaviour (2020) – [**NCSC;** ~£135,635]
  - PI: LGES; Co-I: BID
  - Two systematic reviews; (1) theories of online behavior, (2) social identity theory online

Impact and Public Engagement

I place a high value on ensuring that research, where possible, can be impactful in the real-world. In addition to university led research, I have worked in both public and private sectors, including a Cabinet Office placement in 2018. This led to a recent panel member appearance as part of a Bath Science in Policy event on Artificial Intelligence. My research has also started to appear across national and international media outlets. This includes online and print coverage in New Scientist, New Statesman, and The Verge (online). I have written for the Conversation, which resulted in an appearance on the China Global Television Network – America news report discussing screen time and 'digital detoxes'. In 2021, I was invited onto Newsreel podcast (Whistledown Productions) to talk about technology use and algorithms for the Swedish broadcasting company for children aged 10-14, alongside CBBC Newsround to discuss the impact of social media 'likes' on children.

Publications

Under Review/In Process
- Brown, O., Smith, L.G.E., **Davidson, B.I.**, Racek, D., Joinson, A.N. (Submitted). Detecting online risk signals of offline terrorist offending
- Racek, D., **Davidson, B.I.,** Thurner, P.W., Zhu, X., & Kauermann, G., (Submitted). The Politics of Language Choice: How the Russian-Ukrainian War Influences Ukrainians' Language Use on Twitter.
  - [Preprinted](#).
- Fraser, H., et al., (submitted). Medication use for depression and anxiety: Data collected from 28/29 year-old offspring in the Avon Longitudinal Study of Parents and Children. Wellcome Open Research.
- Ellis, D.A, et al. (R&R). Assessing computational reproducibility in Behavior Research Methods [Stage 1 Registered Report]
- Asher, M., **Davidson, B.I.,** Boyd, R., Jayes, E., & Nightingale, S., Review of Bias in CSS

Peer-Reviewed Publications
- Racek, D., Thurner, P.W., **Davidson, B.I.**, Zhu, X., & Kauermann, G. (2023). Conflict Forecasting using Remote Sensing Data: An Application to the Syrian Civil War. *International Journal of Forecasting*
- van der Linden, **Davidson**, et al., (2022). On the role of technology in human-dog relationships: a future filled with dreams or nightmares? *IEEE Transactions on Technology & Society*
- Brown, O., Smith, L.G.E, **Davidson, B.I.**, & Ellis, D.A. (2022). The problem with the internet: an affordance-based approach for psychological research on networked technologies. *Acta Psychologica*
- **Davidson, B. I.**, Shaw, H., & Ellis, D.A. (2022). Fuzzy Constructs in Technology Usage Scales. *Computers in Human Behavior*.
  - Preprinted.
  - Data and code available.
- **Davidson B. I.** (2022), The Crossroads of Digital Phenotyping. Special Issue on Mobile Technology in Medical and Psychiatric Settings in *General Hospital Psychiatry*

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- **Davidson, B.I.,** Ferrer Portillo, K.F., Wac, W., McWilliams, C., Bourdeaux, C., & Craddock, I.J., (*2022*). Requirements for bespoke ICU Dashboard in response to the COVID-19 Pandemic, *JMIR Human Factors*

- Parry, D.A., et al., (*2021*). Social Media and Well-being: A Methodological Perspective. In the Special Issue: Social Media and Well-being 2022 in *Current Opinion in Psychology*. [Invite Only].
    - Preprinted.

- **Davidson, B.I.**, Ellis, D.A., & Stachl, C., Taylor, P.J., & Joinson, A.N. (*In Press*). Measurement practices exacerbate the generalizability crisis: Novel digital measures can help. *Behavioral and Brain Sciences*. [Invite Only]

- Parry, D.A., **Davidson, B.I.**, Sewall, C., and Fisher, J., (2021*).* A systematic review and meta-analysis of discrepancies between logged and self-reported digital media use, *Nature Human Behaviour*, https://doi.org/10.1038/s41562-021-01117-5
    - Preregistered.
    - Preprinted.
    - Data and code available.

- Geyer, K., Ellis, D. A., Shaw, H., and **Davidson, B. I.**, (2021). Open-source smartphone apps and tools for measuring, quantifying, and visualizing screen time. *Behavior Research Methods*
    - Code and app available.

- Etchells, P., **Davidson, B.I.**, Kaye, L.K., Ellis, D.A., & Lieberoth, A. (2021). Researchers should avoid causally attributing suicide to video game play as a single factor. *Perspectives in Psychiatric Care*

- **Davidson, B. I**., & Joinson, A. N., (2021), Shape Shifting Across Social Media. *Social Media + Society. 10.1177/2056305121990632*

- Dufresne, Y. & **Davidson, B. I.**, (2021), Big Data in *Key Concepts in Research Methods*, Taylor & Francis Group, Oxford, UK.

- Dienlin, T., Johannes, N., Bowman, N.D., … **Davidson, B.I.**, … et al., (2021), An Agenda for Open Science in Communication, *Journal of Communication*, [Foundation piece for a special issue: Open Science in Communications], 10.1093/joc/jqz052.

- Shaw, H., Ellis, D.A., Geyer, K., **Davidson, B. I.**, Ziegler, F., & Smith, A. (*In Press*). Self-reports overstate the relationship between smartphone usage and mental health. *Technology, Mind + Behavior.*
    - Preregistered, preprinted, and postprinted.
    - Data and code available.

- Satchell, L., et al., (2020), Development of an Offline-Friend Addiction Questionnaire (O-FAQ): Are most people really social addicts? *Behavior Research Methods*. 10.3758/s13428-020-01462-9
    - Preregistered, preprinted, and postprinted
    - Data and code available.

- Taylor, P.J., Banks, F., Jolley, D., Ellis, D.A., Watson, S., Weiher, L., **Davidson, B.I.**, & Julku, J., (*In Press*), The Role of Oral Hygiene in Promoting Verbal and Nonverbal Displays of Confidence, *Journal of Social Psychology.*
    - Data and code available.

- Ellis, D. A., **Davidson, B. I.**, & Kaye, L. K., (2019), Should smartphones be banned for children or does cyberpsychology have a bigger problem? *Cyberpsychology, Behavior, and Social Networking*, 22(7), 508-509, 10.1089/cyber.2019.29152.lte.

- **Davidson, B. I.,** & Ellis, D. A., (2019), Social media addiction: technological déjà vu, *BMJ*, 365, I4277, 10.1136/bmj.I4277.

- Ellis, D. A., **Davidson, B. I.**, Shaw, H., & Geyer, K., (2019), Do smartphone usage scales predict behavior*?*, *International Journal of Human-Computer Studies*, 130, 86-92, 10.1016/j.ijhcs.2019.05.004.
    - Preprinted and postprinted.

- **Davidson, B. I.**, Jones, S. L., Joinson, A. N., & Hinds, J., (2019*)*, The evolution of online ideological communities, *PLoS ONE*, 14(5): e0216932, 10.1371/journal.pone.0216932.
    - Data available.
- **Davidson, B. I.**, Joinson, A. N., & Jones, S. L., (2018), Technologically Enhanced Dating: Augmented Human Relationships, Robots, and Fantasy**,** in *A Networked Self: Love*, pp 129-155, London, UK: Routledge.

Conferences
- Stachl, C., et al. (2022), New Methodological Developments in Latent Variable Modelling – The Act Sequence Approach to Behavior. *52nd DGP Congress 2022, Hildesheim, Germany*.
- Stachl, C. & **Davidson, B.I.** (hosts) with Shaw, H & Boyd, R. (2022). Analyzing Digital human Behavior: The Shape of Psychology to Come. *SPSP Symposium, San Francisco, USA.*
- Parry, D.A., **Davidson, B.I.**, Sewall, C., and Fisher, J., (2021*)*. A systematic review and meta-analysis examining the accuracy of self-reported digital media use, *ICA 2021; Mobile Communications Section*, [Talk]   [**Top Paper Awarded**]
- **Davidson, B. I.** (2021), What are technology usage scales actually measuring? *BPS Cyberpsychology Annual Conference 2021.* Nottingham, UK. [Talk + Symposium].
- **Davidson, B. I.** (2019), *Invited talk*: Technology, Social Media, + Society. *University of Bristol's Social Media Round-Up*. Bristol, UK.
- Van der Linden, D., **Davidson, B. I.**, & Zamansky, A. (2019), Location Privacy Concerns in the Internet of Pets. *Animal-Computer Interaction*. Haifa, Israel. [Full paper].
- Geyer, K., Shaw, H., **Davidson, B. I.**, Ellis, D. A., (2019). New capabilities for detecting smartphone usage. *Data Natives.* London, UK. [Talk].
- **Davidson, B. I.**, Jones, S. L., Joinson, A. N., & Hinds, J., (2018*),* The Evolution of Social Role Ecologies in Online Ideological Communities, *Behavioural and Social Sciences in Security 2018 (BASS'2018)*, Lancaster, UK. [Poster]. [Runner up best poster award].
- **Davidson, B. I.**, (2017), Shape Shifting Across Social Media, *CREST Conference 2017*, Reading, UK. [Poster].

Public Dissemination Documents
- **Davidson, B.I.**, Living Data Analytics Textbook – I am writing an interactive and comprehensive textbook in R on data mining, machine learning, and analytics more generally and will seek to find funding and publishers to develop this further. It is a WIP, but available and being used by colleagues at UoManchester, PhD students, alongside being shared within funder networks
- **Davidson, B.I.** & Dwyer A. conducted all data collection and analysis, and I developed all data visualizations for the Future of the UK's Cyber Security Research Position in the World report commissioned by the National Cyber Security Centre (NCSC), [Online]: https://research-information.bris.ac.uk/ws/portalfiles/portal/247699752/The_Future_of_UK_Cyber_Security_ Feb_2020.pdf
- Ellis, D. A. & **Davidson, B. I.**, (*2019),* Digital Detoxes are a solution looking for a problem, *The Conversation*, [Online]: https://theconversation.com/digital-detoxes-are-a-solution-looking-for-a-problem-106460.
- Joinson, A. N. & **Davidson, B. I.**, (2017), Why Networks Matter*, CREST Security Review*, 5, pp 4-5.

Honours & Awards

- **The Dean's Award** for Research Communication and Translation 2021, University of Bath, School of Management

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- **Top Paper Award**, ICA 2021, A systematic review and meta-analysis examining the accuracy of self-reported digital media use
- **Runner up best poster award**, CREST Conference 2017, The Evolution of Social Role Ecologies in Online Ideological Communities

Invited Talks

2022
- *Digital Phenotyping and Digital Traces*. University of Exeter, Institute for Data Science and Artificial Intelligence Seminar Series

2021
- *Ethics in Mobile Sensing, Data Mining, and Analytics*. University of St. Gallen. MSc.
- *Tips & Tricks for Analyzing Large-Scale Forum Data*. Cybersecurity Summer School for all CDTs for Cybersecurity in the UK. PhD
- *Roles in Online Communities.* University of Bath & Bristol; PhD
- *Harnessing Digital Traces*. University of Bath & Bristol; full day workshop. PhD
- *Strategies for finishing your PhD.* University of Bath; panel. PhD.
- *Media Advice and Experiences*. University of Bath. Staff.
- *Online Analytics: From the clear-web to the deep-web*. Bath Spa University. MSc

2020
- *So, you're getting a PhD – what next?* University of Bath. PhD Conference.
- *Clustering & Classification w/ online metadata*. University of Bath & Bristol. PhD Seminar

Teaching

Singapore Royal Airforce (2022 --)
- Introduction to Machine Learning for Engineers
  - Course covering clustering, classification, image analysis (recognition and classification)

University of Bath (2020 –)
- Course Convenor & Lecturer (2020/21). *Data Mining & Machine Learning*. MSc.
  - 2020/21 teaching evaluation: **4.1/5**
  - 2021/22 teaching evaluation: **4.33/5 (4.5/5 median)**
- Course Convenor & Lecturer (2020/21). *Data Mining, Machine Learning, & Econometrics*. MSc.
- Course Convenor & Lecturer (2020/21). *Data Mining*. Online MSc.

University of Bath (2017 – 2019)
- Teaching Assistant (2019) [marking]. *Virtual Organizing*. 3rd Year UG.
- Seminar Leader (2018). *Research Methods: NVIVO*. MSc.
- Lab Demonstrator (2018). *Intermediate Business Analytics*. 2nd Year UG.
- Guest Lecture (2017). *The PhD at the University of Bath*. 1st Year PhD.
- Seminar (2017). *Shape Shifting Identities*. 1st Year PhD.

University of Edinburgh (2013 – 2015)
- Seminar Leader (2013-2015). *Skills for Business*. 1st Year UG.
- Guest Lecture (2014). *Internships in Banking*. 2nd Year UG.

Supervision

PhD Students
- Darja – EPSRC iCase with BT – Anti 5G Narratives
- Emily – EPSRC CDT for Cybersecurity TIPS at Scale – Conspiracy Theory Narratives

- Holly – EPSRC CDT in Digital Health and Care – Using machine learning to predict long-term anti-depressant usage outcomes
- Carole – CDT Aeronautics – Digital Test Pilots

Post-Doctoral Researchers
- Social Psychological Theories of Online Behavior [systematic reviews] 2020/21
  - Dr Eric M
  - Dr Daniella K
  - Cassie L

Administration

- **Member** (2023) Impact Assessment Group – University of Bath
- **Member** (2021) of the Programme Committee for the Animal-Computer Interaction Conference 2021
- **Member** (2020 –) of the Social Sciences Research Ethics Committee (SSREC) at the University of Bath
- **Member** (2020 –) of the Ethics Committee for CREST (SREC)
- **Member** (2020 –) of the IEEE Committee for Ethically Aligned Design in the Arts.
- **Scientific Committee Member** (2020) for BPS Cyberpsychology Inaugural Conference
- **PhD Mentor** (2016–2018) [University of Bath, School of Management].
- **Management PhD Seminar Coordinator** (2016/17) [University of Bath, School of Management].

Editorial Board Member
- [**Psychology**] Frontiers in Computational Social Psychology
- [**General Science**] PLOS One

Ad-Hoc Reviewing
- [**Communications**] Social Media + Society; Mobile Media & Communications; International Communication Association (Conference); Information, Communication and Society; Policy & Internet.
- [**Psychology**] Psychological Science, Computers in Human Behavior; Technology, Mind, and Behavior. Personality Science
- [**Computer Science**] Online Information Review; Computers & Education; NordCHI.
- [**Medicine**] Journal of Internet Medical Research (JMIR).
- [**General Science**] PLoS ONE
- [**Management**] European Conference on Information Systems (ECIS)
- [**Funding Bodies**] EPSRC – SPRITE+ Network Sandpit applications (2020).

Grant Reviewing
- **Home Office** – CREST Commissioning Call 2020.
- **ESRC** – CREST Commissioning Call 2019; 2021

Additional Skillsets

- [**Programming Languages**] R [intermediate], Python [basic], SQL [intermediate]
  - [**Data Wrangling**] R [advanced], Python [basic], STATA [basic]
  - [**Machine Learning**] R [intermediate], Python [basic], Weka [intermediate], Orange [Intermediate/Advanced]
  - [**Statistics**] R [advanced], Python [intermediate]
  - [**NLP**] R [intermediate], Python [intermediate]

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- [**Quantitative Methods**] Descriptive statistics [advanced]; inferential statistics [advanced]; Survey methodologies [advanced]; Data mining [advanced], Machine learning, NLP, and text analysis [intermediate]
- [**Data Visualization**] Tableau [intermediate], R [expert]; time-series and complex data presentation [intermediate]
- [**Experimental/Research Design/Methods**] advanced
- [**Writing**] advanced
    - [**Bids**] intermediate
    - [**Report/Research writing**] advanced
- [**Soft Skills**] Public speaking – Invited for TV interviews, newspaper interviews, podcasts; Lecturing MSc students Data Mining & Machine Learning; Line managed three postdocs and four PhD students.
- [**Ethics & Open Science**] I serve on a university level ethics board and a national ethics board for security projects. I am a passionate advocate for open science and open-source tools. Ethically, this also helps ensure the scientific rigour of work, as it allows for others to see and understand exactly how data were processed, analysed, and interpreted.

Additional Materials

Preprints

- Parry, D., **Davidson, B.I.**, Sewall, C., Fisher, J., Mieczkowski, H., & Quintana, D. (2020). Measurement Discrepancies Between Logged and Self-Reported Digital Media Use: A Systematic Review and Meta-Analysis. *PsyArXiv*. 10.31234/osf.io/f6xvz.
    - Data and code: osf.io/dhx48/
- Satchell, L., Fido, D., Harper, C., Shaw, H., **Davidson, B.I.**, Ellis, D.A., Hart, C., Jalil, R., Bartoli, Kaye, L., Lancaster, G., & Pavetich, M., (2020), Development of an Offline-Friend Addiction Questionnaire (O-FAQ): Are most people really social addicts? *PsyArXiv*, 10.31234/osf.io/7x85m. [V4].
- **Davidson, B.I.** Shaw, H., & Ellis, D.A., (2020), Fuzzy Constructs and Assessment: The Overlap between Mental Health and Technology 'Use'. *PsyArXiv*, 10.31234/osf.io/6durk. [V2].
    - Data and code: 10.17605/OSF.IO/84J6H
- **Davidson, B.I.** & Ellis, D. A., Bowman, N.D., Liveley, G., Shaw, H., Przybyski, A.K., & Levine, M. (2019), Avoiding Irrelevance: The manifestation and impacts of technophobia in psychological science. *PsyArXiv*, 10.31234/osf.io/b9f4p. [V2].
- Ellis, D. A., **Davidson, B. I.**, Shaw, H., & Geyer, K., (2018), Do smartphone usage scales predict behavior?, *PsyArXiv*, 10.31234.io/6fjr7.
    [Preprint; published in IJHCS].

Preregistrations

- Parry, D.A. & **Davidson B.I.** (2020), A Meta-Analysis of Associations Between Log-Based and Self-Reported Digital Media Use [WWW:] https://osf.io/kcshv/
- Shaw, H., Ellis, D. A., Geyer, K., Ziegler, F., & **Davidson, B. I.**, (2018), The Relationship between Objective Smartphone Use, Health, and Wellbeing, [WWW:] https://osf.io/a4p78/
- Panayiotou, M., **Davidson, B. I.,** Black, L., (2020). Measures of social media use for adolescents: a systematic review,
    [WWW] https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42020141428