Michael Pascale, PhD MA

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I specialise in developing cutting-edge, data-driven strategies to understand and improve how people interact with their environment (technology, infrastructure, teams, organizations). My passion is to increase safety, performance, reliability, and well-being through effective design. I set myself apart by leveraging modelling techniques (e.g., AI, machine learning, advanced statistics) to analyse the interfaces between users, systems, and the built environment. My skills can also be applied across the business to explore relationships within existing data, to analyse documentation and processes, and to build automated functions to assist with document production and for decision making.

Profession

Cognitive Engineer
Human factors specialist
Experimental cognitive psychologist
Ergonomist

Qualifications

PhD, Psychology (Human Factors)
MA, General/Experimental Psychology
BA, General psychology

Key Skills

- Bespoke artificial intelligence (AI), large language model (LLM), and machine learning (ML) applications
- Frontend and backend development using JavaScript, TypeScript, Python
- Sociotechnical systems analysis and 'systems thinking'
- Intermediate proficiency with Google Cloud Services, Firebase
- Development of bespoke human factors methodology
- User interface analysis, usability
- Experimental design, research
- Implementation of risk, error, and safety-focused analyses
- Task analysis, Workload, Reliability
- Data structuring, statistical analysis, and reporting in STATA, R, Python, Excel
- Human factors integration planning and reviewing
- Quantitative and qualitative data collection methods and analysis
- Client engagement,
- Eye-tracking measurement
- Situation awareness measurement
- Alarm design/Information delivery
- Technology/User acceptance
- Conducting interviews/observations
- Development of training materials
- Participant recruitment, tracking, and engagement
- Developing representative, simulated "microworlds"

Professional and Academic Positions Held

psilogi, Brisbane, QLD, Australia
2024 – present Director and Principal Consultant

BIDLOGIQ, Brisbane, QLD, Australia
2025 - present Founder

Arup, Brisbane, QLD, Australia
2023 – 2025 Senior Human Factors Consultant

Cortexia, Brisbane, QLD, Australia
2019 – 2022 Senior Human Factors Specialist (casual employment)

Queensland University of Technology, Brisbane, QLD, Australia
2018 – 2022 Research Fellow

The University of Queensland, Brisbane, QLD, Australia
2017 – 2018 Private tutoring (self-employed)
2014 – 2017 Teaching/Private tutoring, School of Psychology
2014 – 2018 PhD candidate (Doctoral thesis, conferred June 2018)

Ocean Mental Health Services, Bayville, NJ, USA
2013 – 2014 Outpatient counsellor, Involuntary Outpatient Services
2012 – 2013 Outpatient counsellor, Adult Residential Services
2010 – 2012 Youth advocacy and behavioural assistance

Project Experience

BIDLOGIQ (www.bidlogiq.ai) – B2B Bid Support, Software as a Service
Founded BIDLOGIQ and is the sole, full-stack developer of the MVP, including all frontend and backend services and deployment to the Google Cloud Platform. Developed comprehensive algorithms using large language models and machine-learning pipelines. Coordinated a small team of Co-Founders to bring BIDLOGIQ to market.

National Transport Research Organisation – Signaller Workload Toolkit
Completed a comprehensive, academic review of the state of the art in workload measurement focusing on adaptability and potential to be used as a unified measurement toolkit within signal boxes in the Australian context (Phase 1). Conducted interviews and small workshops with subject matter experts to explore local barriers to measuring workload and how best to design and

Recent Publications

PASCALE, M. T., Rodwell, D., Bond, A., Schroeter, R., Rakotonirainy, A., & Lewis, I. (2025). Examining longitudinal experiences with connected vehicle technology in Australia's Largest C-ITS pilot. *Transportation Research Part F: Traffic Psychology and Behaviour*, 108, 89-106.

Rodwell D., Ho B., **PASCALE** M. T., Elrose F., Neary A., & Lewis I. (2023). In their own words: A qualitative study of users' acceptance of connected vehicle technology after nine months of experience with the technology. *Transportation Research Part F: Traffic Psychology and Behaviour*, 97, 73-93.

PASCALE, M. T., Rodwell, D., Coughlan, P., Kaye, S.-A., Demmel, S., Dehkordi, S. G., Bond, A., Lewis, I., Rakotonirainy, A., & Glaser, S. (2021). Passengers' acceptance and perceptions of risk while riding in an automated vehicle on open, public roads. *Transportation Research Part F: Traffic Psychology and Behaviour*, 83, 274–290.

PASCALE, M. T., Sanderson, P., Liu, D., Mohamed, I., Brecknell, B., & Loeb, R. G. (2019). The Impact of Head-Worn Displays on Strategic Alarm Management and Situation Awareness. *Human Factors*, 61(4), 537–563. https://doi.org/10.1177/0018720818814969

PASCALE, M. T., Sanderson, P., Liu, D., Mohamed, I., Stigter, N., & Loeb, R. G. (2018). Detection of visual stimuli on monocular peripheral head-worn displays. *Applied Ergonomics*, 73, 167-173.

PASCALE, M., Sanderson, P., Liu, D., Mohamed, I., Brecknell, B., Loeb, R. (2016). Continuous information displays for multiple patient monitoring. Proceedings of the 60th Annual Meeting of the Human Factors and Ergonomics Society. *Paper presented at the Proceedings of the Human Factors and Ergonomics Society Annual Meeting: HFES2016*, Washington DC (p. 1556-1556). Sage Publications.

PASCALE, M., Sanderson, P., Liu, D., Mohamed, I., Stigter, N., Loeb, R. (2015). Peripheral detection for abrupt onset stimuli presented via head-worn display. Proceedings of the 59th Annual Meeting of the Human Factors and Ergonomics Society. *Paper presented at the Proceedings of the Human Factors and Ergonomics Society Annual Me*eting: HFES 2015, Los Angeles (p. 1326-1330). Sage Publications.

PASCALE, M., Sanderson, P., Liu, D., Mohamed, I., Loeb, R. (2015). Event detection using a simulated head-worn display. The Proceedings of the 19th Triennial Congress of the International Ergonomics Association. *Paper presented at the 19th Triennial Congress of the IEA: IEA2015*, Melbourne (p. 1-3).

implement a workload toolkit that is non-invasive, robust, and linked to the work being performed (Phase 2). Phase 3 (scheduled FY2026-2027) will consist of the development and testing of the final workload toolkit to be implemented across Australia and New Zealand.

Queensland Rail – Spatial Capacity Assessment and Tool Development

Led the development of a systematic approach to understanding demand/capacity for lifts at new and to-be-upgraded rail stations in the southeast Queensland context, focusing on spatial footprints rather than maximum weight and headcount. The framework was delivered in the form of a deployable tool that stakeholders can use to test interactions between key variables related to locale/context, population and demand projections, and, most importantly, user-needs, beyond those described in the Disability Standards for Accessible Public Transport.

Queensland Rail – Accessibility Strategy

Supported Queensland Rail in designing a best-practice accessibility strategy, beyond the Disability Standards Accessible Public Transport (DSAPT) requirements. Provided expertise in data structure, analysis, and dissemination in conjunction with revising/reviewing/designing the set system/customer requirements.

Queensland Rail – Human Factors Focused Agent Based Modelling (ABM)

Collaborative exploration of the potential for ABM to be leveraged as a human factors analysis tool. The aim was to measure work as planned (e.g., in standard operating procedures) against work as done (data from the field) using computational modelling in NetLogo and Python.

Transport for NSW – Digital Systems

Conducted a human error analysis (HEA) focusing on interactions with automated train systems (European Train Control System - ETCS). The transition from Level 1 (continuous supervision) to Level 2 (continuous supervision with automation) can introduce a variety of human factors risks. The HEA explored the new requirements for crew, to highlight new risks and find suitable mitigations or controls.

Sydney Metro – Stations, Systems, Trains, Operations and Maintenance

Led the delivery of human factors integration within the stabling yard and maintenance depot from the outset of the design stage. Assisted with the design of the built environment (and integrated systems) to ensure a safe and effective work environment for all users within the depot.

Airservices – Controller Performance BNE Dual Runway

Conducted a short series of tests in a high-fidelity simulator to test controller performance while managing aircraft-traffic in BNE's to-be-implemented (at the time) dual-runway arrangement. Specific activities included observations followed by paper-based measurements of workload, situation awareness, and stress, and, finally, debrief interviews.

Airservices – INTAS Assessment

Designed and led late-stage assessments of the Integrated Tower Automation Suite (INTAS) designed to replace traditional paper-strips during traffic control processes. The assessment consisted of a desktop usability review, in-situ (tower) observations/interviews with controllers using the system for live traffic control processes, cognitive walk-throughs workshops, and task analysis workshops with controllers to define differences in processes and procedures when specific aspects of the INTAS environment were manipulated. All activities were undertaken to identify technologically driven, unwanted decreases in situation awareness alongside increases in workload and/or stress.

Airservices – INTAS Usability/Training Review

Late-stage desktop usability assessment/review focusing on layout and workflow. Identification of risks and proposed controls. Assessment of training materials and current state-of-the-art in training methodology (literature review).

Dept. of Transport and Main Roads – Ipswich Connected Vehicle Pilot
Led preliminary investigations of safety-critical stimulus presentation including device selection and fitment, as well as the design of the algorithm for alarm/alert escalation. Wrote and designed all training materials provided to end-users at all stages of the study. Designed methodology for collecting subjective data, and he carried out exploratory analyses including in-depth reporting of driver-experiences in the field as well as in a simulated environment. Designed a system of integrated applications that facilitated the team's ability to track volunteers [drivers] during their 9-12 months of active participation.

Queensland University of Technology – Design/Analysis of CAV Studies
Designed and analysed a series of studies that were conducted to measure driver/operator behaviour behind the wheel of a fully automated (SAE Level 3/Level 4) vehicle. The studies focused on performance and behaviour while the user completed a continual non-driving task (while the vehicle was in automated mode), and during 'takeovers' from automated to manual mode under differing circumstances and with different in-vehicle prompts.

D. Transport and Main Roads – Cooperative and Highly Automated Driving
Designed the methodology and training materials to test driver performance behind the wheel of SAE Level 3/4 automated vehicles. Engaged with vehicle-automation developers to assist in the design of specific vehicle functions related to transitions between vehicle states (automated versus manual control). Led recruitment processes and managed a team of research assistants who conducted the testing regiment he developed. Led the analyses and drafted reports exploring technology acceptance, workload, stress, risk perceptions, gaze behaviour, and physical responses to unexpected automation failure.

National Bank – Data Entry Assessment and Designing a 'Just' Culture
Observed and interviewed workers completing data entry/checking tasks to assess the systems in-place that were necessary to complete each transfer of data. Provided software and procedural recommendations designed to reduce the likelihood or error while manually entering data. Further interviews were then conducted with management to understand the culture within the organisation and find pathways towards a more "just" system, that reduces individual blame and encourages error reporting, including near-misses.

Inland Rail - Beerburrum to Nambour Technical Advisor (Human Factors)
Conducted a technical review of the human factors integration plan for a rail upgrade being undertaken in Queensland.

Queensland Rail – STARR Platform Height Analysis
Collated and analysed station data to explore differences in platform heights across the network.

ARC DP Grant – Head-Worn Displays in Healthcare
Designed and facilitated research exploring advanced wearable devices that increased situation awareness by reducing clinicians' reliance on traditional, but inaccurate patient alarm systems.