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| **Edgar Brea, Ph.D.** |
| • Address: The University of Queensland, Brisbane, QLD 4072, AU • Mobile: +(61) 414 195 467  • E-mail: [breaedgar@gmail.com](mailto:breaedgar@gmail.com) • Homepage: <https://edgar-brea.github.io/> |

**CAREER SUMMARY**

* Innovation management researcher with 10+ years of academic and consulting experience analysing economic and business data to support strategic decision making in scientific research contexts
* Extensive experience conducting end-to-end research investigating success factors in technology commercialisation and innovation activities
* Strong qualitative and quantitative skills. In the quantitative area, I have deep expertise in a range of data science methods including big data analytics, supervised and unsupervised machine learning
* Significant experience managing research projects, stakeholder engagements, and collaborations with cross-disciplinary teams to achieve project and organisational level goals
* Strong communication skills, using various strategies for different audiences: written (e.g. thought leadership reports for executives), visual (dashboards for scientists), verbal (talks, workshops)

**EDUCATION**

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| **The University of Queensland**  Doctor of Philosophy – Innovation management  Thesis topic: Examining business model innovation from financial data | Jul 2013 - Jan 2018 |
| **The University of Queensland**  Master of Technology and Innovation Management | Feb 2011 - July 2012 |
| **Universidad Metropolitana (VE)**  Bachelor of Information Systems Engineering | Feb 2000 - May 2006 |

**PROFESSIONAL EXPERIENCE**

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| **Industry Research Fellow – Business School, The University of Queensland (UQ)**  *Responsibilities:*   * Conducting applied research with industry clients using computational statistics, econometrics, and techno-economic assessments to solve business problems * Conducting and leading case study research on the use of data-driven strategies to increase innovation outputs and performance * Leading the design and implementation of a data analytics laboratory at UQBS to support research on innovation strategy and management * Directing and conducting research on creating measures and models to examine innovation outputs at the firm and national levels * Collaborating in the development of an industry/corporate engagement model associated with the Master of Business Analytics | May 2021 - Present |
| **Research Fellow – Business School, Queensland University of Technology**  *Responsibilities:*   * Led and conducted a study on innovation activities in science-driven organisations using qualitative and quantitative data, seeking evidence of systematic knowledge management and innovation management practices * Collaborated with professors and senior researchers on multiple grant applications on organisational learning from innovation-related projects | Mar 2021 ­­- Dec 2021 |
| **Research Fellow – Australian Institute for Business and Economics, UQ**  *Responsibilities:*   * Led a national study on innovation in ASX-listed firms together with CSIRO. It involved various data sources and econometric models, and provided insights on how executives can manage innovation activity to boost financial performance * Led a strategic assessment for CSIRO's Cyber-Physical Systems research program that influenced decisions on which areas to grow in the short, mid and long terms * Investigated business model innovation in Mining Equipment, Technology and Services firms, as a joint project with QUT, Mining3 and METS Ignited * Conducted research on innovation performance, research and innovation activity measurement, and financial performance of techno-scientific organisations, using econometrics, machine learning, network analysis and big data analytics | Aug 2017 - Mar 2021 |
| **Management Consultant – Independent Consulting**  *Responsibilities:*   * Developed technological innovation evaluations, value chain analyses and strategic assessments for companies from several industries including food manufacturing, telecommunications, agriculture and biotechnology * Employed advanced data analytic and visualisation methods to qualitative and quantitative data within research frameworks designed to provide business insights and solutions and facilitate long-range planning * Examples of outputs: delivering results presentations to executives of a telecom firm and an agricultural industry peak body, strategic plan reports and thought leadership reports to horticulture and food manufacturing organisations | Jul 2013 - Jul 2017 |
| **Business Development Associate ­– CSIRO**  *Responsibilities:*   * Developed a market scan and technology audit for a new strategic research program involving assistive ICT-based manufacturing systems, contributing to envisage the socio-economic impact of these technologies and potential markets * Prepared industry reports that attracted industry's interests in the initiative. The documents supported decision making on pathways to deliver, commercialise and acquire disruptive technologies for the manufacturing industry * Established and conducted consultation forums (interviews and workshops) and presentations to validate the desktop market scan and collect additional insights | Sep 2012 – Jul 2013 |
| **Information Systems Consultant ­– Banesco (Finance sector, Venezuela)**  *Responsibilities:*   * Developed and implemented IT web-based solutions through strategic projects, contributing to the expansion and upgrading of the bank's technological platform * Maintained continuous communication with internal clients (managers), and project members with different backgrounds (accountants, lawyers, IT developers, database developers marketing and finance analysts) * Managed and scheduled source code deliveries, contract programming activities, documentation, internal client's participation and allocated budget for two ICT development projects | Jun 2009 - Jan 2011 |
| **Information Systems Consultant ­– PDVSA Petrocedeno (Oil & Gas, Venezuela)**  *Responsibilities:*   * Analysed, designed and developed web applications and IT solutions required by the company's departments and managers of corporate divisions * Maintained the content and operability of the company's intranet, including negotiation with department leaders to update information in the intranet * Maintained effective communication with internal clients in order to understand their needs regarding information technology requirements | Jun 2005 - May 2009 |

**RESEARCH AND TECHNICAL SKILLS**

* End-to-end data analytic skills: data collection (via APIs, web scraping, large csv files), data cleaning, exploratory data analysis (descriptives, correlations), visualisation (Tableau, Shiny, Plotly, R’s ggplot)
* Expertise with multiple econometric, statistical and machine learning models: logistic, negative binomial, panel and quantile regressions, random forests, factor analysis, hierarchical and k-means clustering, generalised linear models, time series, growth mixture modelling, network analysis
* Expertise in qualitative research methods: multiple case studies, semi-structured interviews, text mining, topic modelling
* Advanced research design skills: Sampling, systematic literature reviews, deductive and inductive approaches, cross-sectional and longitudinal data modelling, statistical robustness tests
* Advanced programming skills in various languages: R (advanced), Python (intermediate), SQL (advanced), HTML/CSS (intermediate), C# (intermediate), Visual Basic .NET (intermediate)

**RESEARCH PAPERS (LAST 5 YEARS)**

* (2023) Brea E. “Ecosystem success in the connectivity era: A framework for understanding actors’ innovation potential”. *Under review by Technovation (Second R&R)*
* (2022) Brea E. and Ford J. “No silver bullet: Cognitive technology does not lead to novelty in all firms”. *Technovation* (In press)
* (2022) Brea E. “Recombination and collaboration patterns driving novelty in machine learning technology”. *Under review by Research Policy*
* (2022) Brea E., Rosemann M. and Desouza K. “Innovation science: Linking organisational innovation and knowledge systems through organised knowing”. *Under review by Journal of Innovation and Knowledge*
* (2021) Brea, E. “An empirical exploration of the role of artificial intelligence in enhancing innovation performance in organisations”. *Paper presented at the 18th International Schumpeter Society Conference in Rome, Italy (virtual)*
* (2019) Brea, E. “Business ecosystems and their multifirm business models: A framework for understanding ecosystem evolution”. *Paper presented at the Strategic Management Society 39th Annual Conference in Minneapolis, United States*
* (2018) Brea, E., Hine, D. and Kastelle, T. “Business model evolution through a complex adaptive system lens: An examination using data mining of financial data”. *Paper presented at the 17th International Schumpeter Society Conference in Seoul, Korea*
* (2018) Brea, E., Hine, D. and Kastelle, T. “Using data mining techniques to explore business model innovation processes”. *Paper presented at the 18th EURAM Conference in Reykjavik, Iceland*

**INDUSTRY REPORTS**

* (2021) Brea E., Hine D., Green T., Oyola G. and Elfes A. “Mapping emerging opportunities for the Cyber-Physical Systems Program”. CSIRO
* (2020) Ford, J. and Brea E. “Thriving through innovation: Lessons from the top”. CSIRO
* (2014) King, S., Hine, D., Brea, E. and Cook, H. “Make for Asia: The emerging Asian middle class and opportunities for Australian manufacturing”. CSIRO and Telstra
* (2013) Brea, E., Kambouris, P., Elfes, A., Duff, E., Bick, M., Bonchis, A., Tews, A. and Lopes L. “An initiative to enhance SME productivity through fit for purpose information and robotic technologies”. CSIRO
* (2013) Brea, E. "State of the food and beverage market in Australia". Food Innovation Australia

**RESEARCH GRANTS**

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| **AI for Missions PhD Scholarship Program**  *Project Title: Global Transitions and the rise of new industries: Uncovering nascent technology trends to understand future material demand*  *Funding agency:* CSIRO  *Amount:* $120,000  *Co-Investigators:* Prof Martie Louise Verreyne (UQ), Dr Tim Baynes (CSIRO), Dr Jim West (CSIRO), Dr Jerad Ford (CSIRO) | 2022 - 2025 |
| **New Staff Start-up Support Funding Scheme**  *Project Title:* Predicting Australian firms’ innovativeness using web mining  *Funding agency:* UQ Business School  *Amount:* $20,000 | 2021 - 2023 |
| **National innovation and technology study**  *Funding agency:* CSIRO  *Amount:* $263,955  *Co-Investigators:* Prof Damian Hine (UQ), Dr Jerad Ford (CSIRO) | 2019 - 2021 |
| **Assessing the potential technological and economic impact of large-scale deployment of robotic technologies to various sectors of the Australian economy**  *Funding agency:* CSIRO  *Amount:* $110,000  *Co-Investigators:* Prof Damian Hine (UQ), Dr Alberto Elfes (CSIRO) | 2017 - 2018 |

**PRESENTATIONS**

* “Thriving through innovation and a corporate entrepreneurial culture”. Suncorp. August 2021
* “Innovation science: From intuition to empiricism”. QUT Centre for Future Enterprise. August 2021
* “Business model innovation in the METS sector”. METS Ignited. August 2018
* “Innovation metrics and business model innovation”. Era Innovation (consultancy). May 2016

**AWARDS AND ACHIEVEMENTS**

* Nomination for Best Research Paper Award – Knowledge & Innovation Interest Group (Strategic Management Society Conference, 2022)
* PhD thesis in the Top 30 of the International Innovation Management Dissertation Award (ISPIM, 2019)
* CSIRO Flagship Postgraduate (PhD) Scholarship recipient (CSIRO, 2013)
* Latin American Internship Scholarship recipient (The University of Queensland, 2011)

**PROFESSIONAL MEMBERSHIPS**

* Strategic Management Society (Since 2019)
* Institute of Analytics Professionals of Australia (2016-2018)