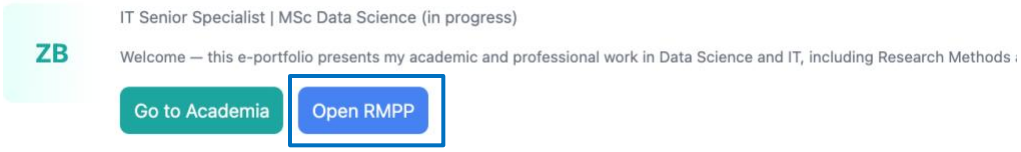
Reflection on Research Methods and Professional Module

[https://b-zahra.github.io/eportfolio/]



WHAT: Module Context and Learning Journey

This module was such an interconnected one, it took me to a deep learning path from research theory to ethical and statistical practice. I liked that it was not only a reading and researching yet I had the chance to apply this research method and connect them and reflect on what they meant in real work envirnment. These tasks which I completed includes collaborative discussions, reflective activities, a literature review followed by a research proposal and couple of statistical exercises.

The research topic which I chose focus on how business can apply LLMs responsibly, to balance innovation with ethical and governance practices. I was interested in learning how AI is shaping organizsation and digitial economies today. In the literature rview I compared some studies that praised AI for its efficiency with some others that warns about bias, misinformation and regulation challenges. After that, in my research proposal, I built up an idea for a qualitiatve study using case students and interviews intrdoucing then my “Balanced Adoption Framwork” which connects governance to buisness performance.

Additionally, I worked on some statistical worksheets that conver hypothesis testing, summary measuring and data visualizing. These exercises assisted me in connecting theory to actual business analysis, which helped me in learning how to interpret and present these results rathar than just doing some calulcations.

SO WHAT: Critical Reflection and Analysis

At the beginning, I used to think statistis is technical and only about formulas and tests. However, this module helped me to approach statistics as a form of reasoning and logical process. Going through these worksheet, the hypothesis testing and summary measures, I learned to view data as a story, to question its narrative, and add my assumptions that will shape a meaning. When I started to interpret regression or correlation outcomes, I learned to ask questions on the reliabily and context not viewing these as only numbers. The case study of the Cambridge Analytica reminded me of if data is used unethically, it can cause a serious harm, this is why both ehtics and statics should go work in tandem.

Also, I have learned the powerful of data visualisation, and how these charts are not neutral but can tell stories. Earlier in my previous visualization reflection, I came to realize that some visuals

like pie charts can hide patterns or even mislead. This lesson moved with me in this module, where I focuse on the purpose of using ‘why’ a chart not only ‘how’ it looks like.

Literature Review and Research Methodology

I learned discipline when conducting my literature review. I have been through many challenging when searching into different academic databases, trying to narrow relevant resources and defining inclusion criteria. Thus, I had to decide what to exclude, and what to maintain. Additionally, another lesson that I learned was that contradictions in literature do not necessarily means disagreement yet often come from using different context or method.

Reading through ethical discussions like Correa et al. (2023) and Deckard (2023) expanded my understanding of Ai ethics across different industries and regions. There was a concept that resonated with me that is “algorithmic difuciary duty”, seeing developers as professionals responsible for societal wellbeing, not just code efficiency. It shaped how I now think about governance: not as a constraint, but as an essential part of sustainable innovation.

When it comes to emtional results, this module assessed my resilience and patience. Most of the time I felt uncertain about what is the best research design to use and often overwhmed by statisical tasks. Though, after some time, I became comfortable with such uncertainty and complexity. Through this process, I gained confidence in my analytical perspective and realized that learning is a an iterative journy.

Professional Ethics in the Age of Generative AI

In this module, particulary activitiy 1 on generative AI governance and the collaborative discussions, I gained a clearly understanding of the professional responsibility. The Correa et al. (2023) reading has emphasized the divergent approaches in regulatory framworks: the risk-based legislation in Europe, the market-driven flexibility in America, and the hybrid framworks in Asia. Such divergence demonstrate that ‘responsible AI’ is not a fixed notion, but it shaped by contextual and cultural differences.

I found deckard’s (2023) concept of ‘algorithmic fiduciary duty’ is thought-provoking. By comparing computing professional’s resonsilities to those of lawyers and doctors, this gave weight to their role as not only technical experts but also proffesion whom rooted in ethics. This means my responsbility goes beyond writing efficient codes or building accurate models, I must actively prevent harm, safeguard equity, and clearly communicate the limitations of system. This perspective redefines how I approached my research proposal, when I began to see governance mechanisms not as bureaucratic formality but as the backbone of sustainable and ethical innovation.

The case study of the Cambridge Analytic demonstrates the consequences of ethical failtures in data governance. In this study, a personality quiz became a tool for psychological control that manipulated millions, this shows how poor consent practices alongside commerical interests can disort ethical research. This case study taught me three lessons that I will carry forward: be honest about the purpose of collecting data, collect the needed data only, and never repurpose the data of others without getting their permission.

Personal and Emotional Dimensions of Learning

In the beginning of units, I found it diffecult to differenitate between the variety of research methods, it felt confusing, whether qualitative or quanitative, inductive or deductive, exploratory or descriptive. I often worried about choosing a wrong methodology and that it might not fit my literature review or the proposal. The initial ethics discussion was challenging. I had to bring together different views of Leslie, Floridi an Dwivedi and compare these which made me think more critically and in a deeper level than how I used to think before.

As I started working on the statistical worksheets, I was very furstrated. The formulas I applied has failed and sometimes I could not interpret ANOVA outputs. Later, I learned that statistics is not only about calculating numbers but finding the meaning from data, as it tells stories, thus my perspective has ulitmitely changed. Also, I stopped seeing mistakes as failures and started to view them as part of the learning process that encourged me to solve these issues or seek help.

The most rewarding moment for me was after I completed my research proposal presentation. After all the readings, synthesis, and critical thinking it were finally able to form the research question and methodology. By creating the Gantt chart and translating theoretical concepts like ‘thematic analysis’ and ‘triangulation into practical research steps, I became confident about shaping a study that can result on new insights.

NOW WHAT: Growth and Future Directions

Professional Skills Development and SWOT Analysis

Locking back in my journey, I can clearly see how my analytical reasoning, ethical decisions, technical assurance has evolved. Below is the reflection of where I am currently standing:

Strengths

- I can now critique academic studies and identify methodological advantages and flaws.
- I know how to design a coherent research study, starting from forming the question, deciding on the methodology and steering the analysis.
- I now recognize the important of the ethical responsibilities when working with data, particular in safeguarding consent, preserving transparency, and addressing bias.

- I can translate statistical findings and communicate these to both technical and non-technical stakeholders.

Weaknesses

- I still need improvement in the advanced statistical modelling alongside the multivariate analysis techniques.
- My understanding in qualitative data collection and coding still limited and require more experiences.
- I tend to underestimate the efforts and time that research writing requires.

Opportunities

- Apply these skills in my MSc capstone project, especially in designing ethical AI research.
- Work toward professional certifications such as the BCS Data Protection or AI Ethics credentials.
- Use my understanding of AI governance to support organisational policy or consultancy work.

Threats

- The pace of AI development and regulation is fast; keeping knowledge current requires ongoing learning.
- Without continuous practice, it's easy to lose statistical and methodological fluency.

Short-Medim Term Plan (Next 6-12 Months)

1. Complete an online course in multivariate analysis or machine learning evaluation metrics to deepen quantitative skills.
2. Volunteer for a qualitative research project or conduct informational interviews with AI practitioners to build interview and coding skills.
3. Begin preparation for the BCS Practitioner Certificate in Data Protection or a related credential to formalize governance expertise.

Long-Term (1-3 Years / Post-Graduation):

1. Engage with organisations like ISO, IEEE, or industry consortia developing AI standards and best practices.
2. Share knowledge through teaching, workshop facilitation, or mentoring junior professionals entering the field.
3. Commit to reading at least two academic papers and one industry report monthly, attending annual conferences, and participating in professional development activities.

Lessons and skills developed:

The skills and insights developed in this module have immediate applicability across multiple professional contexts:

- I can now critically evaluate AI vendor claims, distinguishing substantiated benefits from marketing hyperbole. When a supplier promises "99% accuracy" or "bias-free recommendations," I know to ask: "On what dataset? Using which metrics? What failure modes remain?"
- I can design and conduct organisational research to assess customer needs, evaluate system performance, or compare competing technologies using appropriate methodologies.
- I understand how to structure governance frameworks that balance innovation with accountability, ensuring that AI deployments are transparent, auditable, and aligned with organisational values.
- I understand the trade-offs inherent in different regulatory approaches, enabling nuanced contributions to debates about proportionate governance.
- I can structure arguments systematically, synthesise diverse perspectives, and cite evidence rigorously, skills essential for reports, proposals, white papers, and publications.
- I appreciate that responsible innovation requires diverse perspectives, and I actively seek input from those affected by technological systems.

Conclusion

This Research Methods and Professional Practice module has been transformative. It strengthen my research, ethical and crtical thinking skills in AI-driven digital business. Although there were moments, I will doubt myself and feel frustrated, I learned to view these challenges as opporunities and to approach problems with resilience and reflection. The ethicial and methodological foundations which I gained will support me to apply my skills now in my capstone project and in my future career. Overall, this module taught me a lot, including how the used data and applied methodology will gain meaning only when it is guided by ethics and trust, these principles will shape my upcoming journey from a learner to a responsible practictioner in this field.

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