A Quantitative Framework for Measuring and Prioritising Technical Debt in Mission Critical Trading Information Technology Services

Ethical Considerations for MSc Computing Project

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1 Ethical considerations for the MSc Computing Project

This project develops a quantitative framework and artefact to score and prioritise technical debt in mission critical trading information technology services. It uses anonymised operational service data from an external organisation and does not involve direct contact with human participants.

2 Areas where ethical issues arise

- **Use of organisational data**
  The project uses data held by an external organisation, which the University classifies as requiring ethical consideration and formal approval before use. Appropriate organisational permission must be obtained in writing.
- **Confidentiality and anonymity**
  Operational records can be considered human data under the University definition, so confidentiality and anonymity must be safeguarded. All services and systems will be coded, and no person, team, system or vendor will be identifiable in the dataset or in the dissertation.
- **Data protection and legislation**
  The project must comply with the Data Protection Act 2018 and the General Data Protection Regulation, even though no personal identifiers are intended to be processed. Only system level metrics such as incident counts, mean time to repair and change failure rate will be used, with any identifiers removed at source.

- **Security sensitive and commercially sensitive information**
  The trading context means operational and architectural information may be commercially sensitive. The thesis will describe systems and services in generic terms and avoid disclosing specific architectures, configurations or vendor details that could breach organisational policies.
- **Integrity and responsible reporting**
  The University policy stresses integrity and quality of research. The technical debt scoring model will be presented as an analytical tool with explicit limitations, and any relationships between scores and operational metrics will be reported as correlations rather than causal claims

3 Data storage and safety

In line with University guidance on storing data, the study will:

- Store all datasets and analysis files on secure, password protected and encrypted storage under the student's control.
- Use only anonymised datasets where identifiers have been removed or replaced with codes before transfer.
- Retain the raw dataset only for the period needed to complete and assess the dissertation, after which it will be securely deleted, while the thesis will contain only non identifying summary statistics.

Any artefact source code shared outside the organisation will not contain real operational data or confidential configuration details and will use only synthetic or fully anonymised examples.
Before any empirical work begins, an ethics application will be submitted through the University process, including details of the data source, organisational permission and a brief risk assessment, and research will only proceed once approval is granted.

Word Count: 419

References: