**Act Utilitarianism and Software Engineering Ethics**  
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#### **Introduction**

Act utilitarianism is the theory that an action should be taken based on the result that gives the greatest overall societal benefit and the least suffering in a given situation. Rule utilitarianism is based on ethical rules that are pre-determined. Act utilitarianism is more flexible in that the answers can change given the situation. In software engineering, this approach can be used when dealing with innovative and sensitive environments like human welfare and privacy rights. This paper gives two examples of act utilitarianism and software engineering ethics: intellectual property rights and data privacy. While act utilitarianism ensures maximum overall societal benefit and least suffering, exceptions are needed in rare and extreme cases like Covid.

#### **Example 1: Data Privacy and Ethical Trade-offs**

Data privacy is certainly a hot topic in software engineering. With act utilitarianism, net positive and negative impacts should govern data collection and utilization decisions. Broad-scale data collection benefits society and improves user experience, advances AI, and optimizes digital services (Pant et al., 2023). Unfortunately, these practices are never perfect and can lead to misuse and irreparable harm.

An example of an exception would be during Covid. The government and technology companies used apps that used user location data to pinpoint where Covid could be spreading from. This invasion of privacy lacked user consent was no doubt a breach in a normal situation, but act utilitarianism allows for overall net-positive results over rigid rule-following in extreme circumstances (Scarre, 1998).

#### **Example 2: Intellectual Property and Open-Source Innovation**

Intellectual property is another gray area in software development ethics. Patents, trademarks, and copyrights allow innovation to occur through exclusive rights to their makers. This is difficult in an act utilitarianism framework. D’Andrea (2022) argues that corporate profits outweigh public welfare in the current patent system and essential innovations are hampered.

During Covid, big pharma initially refused to waive their exclusive rights in the face of needed life-saving innovation. Poorer countries couldn’t keep up, affecting the global spread of the virus. In act utilitarianism, the greater good of humanity should be prioritized in this situation, and rules should bend. In software engineering, open-source aligns with this principle by allowing innovation and teamwork over profits of potential patent holders. Not all situations are the same though, and sometimes the current patent system will net more positive results.

#### **Personal Perspective on Act Utilitarianism in Software Engineering**

Act utilitarianism is the most practical ethical framework for software engineering. It allows adaptability in extremely difficult situations. In a fast growing world of AI, cybersecurity, and quantum computing, act utilitarianism allows for essential world-saving decision-making and adaptability.

Time scale is very important in act utilitarianism decisions. Short term decisions may not be beneficial for the long term or vice versa. Decisions should have oversight by independent review boards and be as transparent as possible within the time allotted. I believe exceptions are necessary when dealing with extreme scenarios such as global pandemics or imminent threats to the survival of the human race.

#### **Conclusion**

Act utilitarianism is practical and adaptable and suitable for answering software engineering ethical scenarios. Net positive human wellness should be the guiding goal when dealing with data privacy and intellectual property cases. Software ethics should focus on long-term benefits for society but exceptions may be required in extreme circumstances. A balanced approach allows for both innovation and integrity.

**References**

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