COMP90041: Final Project: Moral Machine Reflection & UML

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Reflection

When designing the program's decision-making process, it was very tough to decide on the model to use. The decision-making process, being quantitative in nature, must utilize some aspects of utilitarianism, which are inherently contradictory to ethical principles as utilitarianism, being a form of consequentialism where choosing the best outcome for the group, might not be the most ethical outcome, which in itself is hard to define as ethics are ultimately subjective.

However, after much thought and the realization that these decisions are made everyday by programmers and engineers when creating algorithms or machines, I tried my best to come up with a decision making process that tries to strike a good balance between my opinions and utilitarianism. For example, in my algorithm, I decided to have a preference towards children, babies and pregnant women when it comes to deciding the outcome of the moral machine as it can be said that these categories of people have the greatest long term potential for society – hence, utilitarianism. In contrast, a penalty for pedestrians who jaywalked was given, which in my opinion is appropriate, but contra to utilitarianism.

Overall, the audit results revealed my uncertainty when it comes to putting weights on a life and the results on random scenarios were a mixed bag. Overall, this assignment has opened my eyes up to the potential dark side to the level of objectivity that comes with an algorithm that decides the fate of one's life.

Audit - auditType : String - sceArray : Scenario[] **Moral Machine UML Diagram** - data : Hashtable<String, Double> - survivorData : Hashtable<String, Double> - calcData : Hashtable < String, Double > -speciesList : ArrayList<String> - totalPersonSurvivors : double - totalAgeSurvivors : double - averageAge : double -runCount : int + Audit() + Audit(scenarios : Scenario[]) + changeScenarios(newSces : Scenario[]) : void + run() : void + run(runs : int) : void + runInteraction(decisions : Decision∏) : void - runUtil(): void - survivalRatioCalc(): void - runInsert(winner : Character[], loser : Character[]) : void · legalityInsert(sce : Scenario, hTable : Hashtable<String, Double>) : void personKeyInsert(c : Character, hTable Hashtable<String, Double>) : void - ageTally(c : Character) : void - animalInsertKey(c: Character, hTable: Hashtable<String, Double>) << Exception >> InvalidCharacterException - tallyKeyInsert(key: String, hTable: Hashtable<String, Double>): Throws void - sortedOut(): List<Entry<String, Double>> + setAuditType(name : String) : void 0...* + InvalidCharacterException() + getAuditType() : String + toString() : String + InvalidCharacterException(line: + printStatistic(): void int) + printToFile(filepath : String) : void 0...1 Generates audit << Exception >> statistics for InvalidDataFormatException scenarios from 0...* Throws + InvalidDataFormatException() + InvalidDataFormatException(line int) EthicalEngine + main(String[] args) : void + pathValidityCheck(command : List<String>, help : String) : void << Exception >> InvalidInputException + userJudgement(userScenario: Scenario[], keyboard: Scanner, interactiveAudit: 0...* Audit): void Throws - userLogUtil(consent : boolean, command : List<String>, interactiveAudit : Audit) : void + InvalidInputException() - configReader(command : List<String>) : List<List<String>> - configInsertUtil(configData : List<List<String>>) : List<Scenario> - addPersonCSV(index : int, configData : List<List<String>>) : Person - addAnimalCSV(index : int, configData : List<List<String>>) : Animal + decide(scenario : Scenario) : << Enumeration >> Decision

