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| **Data Extraction Form** | | | | | | | | | | | | | | | | | | | | | | | |
| **Title** | Automated Bug Finding in Video Games: A Case Study for Runtime Monitoring | | | | | | | | | | **Authors(s)** | | Simon Varvaressos, Kim Lavoie, Alexandre Blondin Massé, Sébastien Gaboury, Sylvain Hallé | | | | | | | | | | |
| **Year** | 2014 | | | | | | | | | | **Venue** | | * Journal | | * **Conference** | | | | | * Other \_\_\_\_\_\_\_\_\_\_ | | | |
| **Quality Assessment criteria** | | | | * **QC1** | | | | * **QC2** | | | | | * QC3 | | * QC4 | | | | | * **QC5** | | | * QC6 |
| **Inclusion Criteria** | | | | * IC1 | | | | * IC2 | | | | | * **IC3** | | | * **IC4** | | | | * IC5 | | | |
| **Exclusion Criteria** | | | | * EC1 | | | * EC2 | | * EC3 | | | | * EC4 | * EC5 | | | | | * EC6 | | * EC7 | | |
| **Approach Used**   * Supervised Machine Learning algorithms * Unsupervised Machine Learning algorithms * Natural language processing * Deep Learning algorithms * Data mining based techniques * Statistical Method * Tool * **Other (using Game loop video)** | | | | | | | | | | **Type of Solution** | | | | | | | | **Yes** | | **No** | | **Unclear** | |
| Novel Technique (Method, Tool, Technique) | | | | | | | | Check mark, Wingdings font, character code 252 decimal. | |  | |  | |
| Evaluation of existing techniques  (Evaluation framework, tool, platform) | | | | | | | | Check mark, Wingdings font, character code 252 decimal. | |  | |  | |
| Supporting techniques | | | | | | | |  | |  | | Check mark, Wingdings font, character code 252 decimal. | |
| **Review dataset** | | **Total number of apps** | | | | Five real world games | | | | **Evaluation Metric Used** | | | | | | | | Cumulative processing time | | | | | |
| **Total number of crawled reviews** | | | | N/A | | | |
| **Year** | | | | 2014 | | | |
| **Research Type Facet**   * Validation Research * **Evaluation Research** * Solution Proposal * Philosophical Papers * Opinion Papers * **Experience Papers** | | | | | **Solution Type**   * **Single** * Hybrid/Integrated | | | | | | | **Contribution**   * Technique * Tool * Comparison * Model * Framework * Prototype * **Taxonomy** | | | | | **Evaluation Strategy**   * **Case Study** | | | | | | |
| **Features used**   * Categorical * **Textual** * Both | | | | | | |
| **Factors Considered** | | | XML written template which generates a message based on game’s current state | | | | | | | | | | | | | | | | | | | | | |
| **Notes** | | |  | | | | | | | | | | | | | | | | | | | | | |
| **Limitations** | | | * GUI need to be reprogrammed for every game * Clear-text XML used in the events * Detection of bugs in real time but no explanation for its categories and classification | | | | | | | | | | | | | | | | | | | | | |
| **Description / Summary** | | | Report on experiments made on a sample of five real-world video games of various genres and sizes, by successfully instrumenting  and efficiently monitoring various temporal properties over their execution including actual bugs reported in the games bug  tracking database in the course of their development using game loop video and runtime monitoring of the game video. | | | | | | | | | | | | | | | | | | | | | |