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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**   * Runtime monitoring architecture for video games. This architecture is a departure from existing work on monitoring in many aspects. Leverage the fact that most video games run what is called a game loop. | | | | | | | | | | **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 Method Used** | | | | | | | | Runtime monitoring architecture for video games (Game Loop) | | | | | |
| **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 * **Controlled Experiment** * Survey * Questionnaire | | | | | | |
| **Features used**   * Categorical * **Textual** * Both | | | | | | |
| **Factors Considered** | | | Game loop where most of the game processing takes place | | | | | | | | | | | | | | | | | | | | | |
| **Notes** | | |  | | | | | | | | | | | | | | | | | | | | | |
| **Limitations** | | | * Automated filing of property violations in a bug tracker * clear-text XML used in the events | | | | | | | | | | | | | | | | | | | | | |
| **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. | | | | | | | | | | | | | | | | | | | | | |