

Acknowledgments

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References

- Abreu, R.; Zoetewij, P.; and van Gemund, A. J. C. 2009. Spectrum-based multiple fault localization. In *Automated Software Engineering (ASE)*, 88–99. IEEE.
- Abreu, R.; Zoetewij, P.; and van Gemund, A. J. C. 2011. Simultaneous debugging of software faults. *Journal of Systems and Software* 84(4):573–586.
- Barto, A. G.; Bradtke, S. J.; and Singh, S. P. 1995. Learning to act using real-time dynamic programming. *Artificial Intelligence* 72:81 – 138.
- Burger, M., and Zeller, A. 2011. Minimizing reproduction of software failures. In *International Symposium on Software Testing and Analysis*, 221–231. ACM.
- Campos, J.; Abreu, R.; Fraser, G.; and d’Amorim, M. 2013. Entropy-based test generation for improved fault localization. In *Automated Software Engineering (ASE), IEEE/ACM*, 257–267.
- de Kleer, J., and Williams, B. C. 1987. Diagnosing multiple faults. *Artif. Intell.* 32(1):97–130.
- Esser, M., and Struss, P. 2007. Fault-model-based test generation for embedded software. In *Proceedings of the 20th international joint conference on Artificial intelligence, IJ-CAI’07*, 342–347.
- Fraser, G., and Arcuri, A. 2011. Evosuite: automatic test suite generation for object-oriented software. In *SIGSOFT FSE*, 416–419.
- González-Sánchez, A.; Abreu, R.; Groß, H.-G.; and van Gemund, A. J. C. 2011. An empirical study on the usage of testability information to fault localization in software. In *SAC*, 1398–1403.
- Kearns, M.; Mansour, Y.; and Ng, A. Y. 2002. A sparse sampling algorithm for near-optimal planning in large markov decision processes. *Machine Learning* 49(2-3):193–208.
- Kocsis, L., and Szepesvári, C. 2006. Bandit based monte-carlo planning. In *Machine Learning: ECML 2006*. Springer. 282–293.
- Myers, G.; Badgett, T.; Thomas, T.; and Sandler, C. 2004. *The Art of Software Testing*. Business Data Processing: a Wiley Series. John Wiley & Sons.
- Nguyen, T.-H. D.; Lee, W.-S.; and Leong, T.-Y. 2012. Bootstrapping monte carlo tree search with an imperfect heuristic. In *Machine Learning and Knowledge Discovery in Databases*. Springer. 164–179.
- Orso, A.; Joshi, S.; Burger, M.; and Zeller, A. 2006. Isolating relevant component interactions with jinsi. In *Proceedings of the 2006 international workshop on Dynamic systems analysis*, 3–10. ACM.
- Perez, A.; Abreu, R.; and Riboira, A. 2014. A dynamic code coverage approach to maximize fault localization efficiency. *Journal of Systems and Software*.
- Russell, S. J., and Norvig, P. 2010. *Artificial Intelligence - A Modern Approach (3. internat. ed.)*. Pearson Education.
- Silva, J. 2011. A survey on algorithmic debugging strategies. *Adv. Eng. Softw.* 42(11):976–991.
- Stern, R.; Kalech, M.; Feldman, A.; and Provan, G. M. 2012. Exploring the duality in conflict-directed model-based diagnosis. In *AAAI*.
- Stumptner, M., and Wotawa, F. 1996. A model-based approach to software debugging. In *the Seventh International Workshop on Principles of Diagnosis (DX)*, 214–223.
- Williams, B. C., and Ragno, R. J. 2007. Conflict-directed A* and its role in model-based embedded systems. *Discrete Appl. Math.* 155(12):1562–1595.
- Wotawa, F., and Nica, M. 2011. Program debugging using constraints – is it feasible? *Quality Software, International Conference on* 0:236–243.
- Yang, L.; Dang, Z.; and Fischer, T. R. 2011. Information gain of black-box testing. *Formal aspects of computing* 23(4):513–539.
- Zeller, A. 2002. Isolating cause-effect chains from computer programs. In *SIGSOFT FSE*, 1–10.