C:/Users/user/Desktop/docs/ug/thesis/answers/q/1/1.md

Optimizing deployment pipelines to reduce deployment time and errors involves implementing strategies that enhance automation, efficiency, and reliability. Here are key methods to achieve these optimizations:

Automation and CI/CD Pipelines

Automated Deployment: Transitioning from manual to automated deployment using tools like Jenkins significantly reduces deployment time and errors by automating each step, ensuring consistency, and enabling parallel processing (Hyun et al., 2024). Automation frameworks streamline code integration, testing, and deployment, minimizing human error and ensuring repeatable processes (Gujar & Patil, 2024). CI/CD Practices: Continuous Integration and Continuous Deployment (CI/CD) pipelines facilitate quicker release cycles, improve error detection, and enhance team collaboration. They are crucial for maintaining system reliability and reducing deployment failures (Emmanni, 2020; Fluri et al., 2023).

Optimization Techniques

Parallelization of Build Processes: Breaking down the build process into smaller, independent tasks that can be executed concurrently reduces build times and accelerates deployments (Gujar & Patil, 2024). Dependency Caching: Reusing previously downloaded components speeds up the build process and minimizes network load (Gujar & Patil, 2024). Incremental Builds: Compiling only the changes made since the last build reduces the workload for each build, accelerating the development process (Gujar & Patil, 2024).

Advanced Deployment Strategies

Rollback Mechanisms: Implementing blue-green and canary deployments allows for smooth transitions and quick rollbacks, minimizing downtime and user disruption (Gujar & Patil, 2024). Machine Learning for Resource Allocation: Predictive resource allocation using machine learning can optimize resource usage, reduce deployment time, and enhance productivity (Mallreddy, 2022).

Standardization and Best Practices

Pipeline Standardization: Establishing a standardized, time-tested process decreases ambiguity, guarantees quality, and boosts productivity (Donca et al., 2022; Muppa, 2023). Security Measures: Implementing secrecy management tools and environment variables, and limiting access rights are essential to prevent sensitive information leakage during CI/CD (Hyun et al., 2024).

Conclusion

Optimizing deployment pipelines involves leveraging automation, CI/CD practices, and advanced strategies like parallelization and machine learning. These methods collectively reduce deployment time, minimize errors, and enhance the overall efficiency and reliability of software delivery processes. Implementing these strategies can significantly improve deployment outcomes in various environments.

These papers were sourced and synthesized using Consensus, an AI-powered search engine for research. Try it at https://consensus.app

References

Hyun, G., Oak, J., Kim, D., & Kim, K. (2024). The Impact of an Automation System Built with Jenkins on the Efficiency of Container-Based System Deployment. Sensors (Basel, Switzerland), 24.

https://doi.org/10.3390/s24186002

Gujar, S., & Patil, S. (2024). Continuous Integration and Continuous Deployment (CI/CD) Optimization. International Journal of Innovative Science and Research Technology (IJISRT). https://doi.org/10.38124/ijisrt/ijisrt24oct014

Donca, I., Stan, O., Misaros, M., Goța, D., & Miclea, L. (2022). Method for Continuous Integration and Deployment Using a Pipeline Generator for Agile Software Projects. Sensors (Basel, Switzerland), 22. https://doi.org/10.3390/s22124637

Emmanni, P. (2020). Implementing CI / CD Pipelines for Enhanced Efficiency in IT Projects. International Journal of Science and Research (IJSR). https://doi.org/10.21275/sr24402001528

Mallreddy, S. (2022). OPTIMIZING CI/CD WORKFLOWS WITH MACHINE LEARNING: PREDICTIVE RESOURCE ALLOCATION FOR ENHANCED DEPLOYMENT EFFICIENCY. IJRDO -Journal of Computer Science Engineering. https://doi.org/10.53555/cse.v8i7.6130

Muppa, N. (2023). Method for Continuous Integration and Deployment Using a Pipeline Generator for Agile Software Projects. Journal of Engineering and Applied Sciences Technology. https://doi.org/10.47363/jeast/2023(5)256

Fluri, J., Fornari, F., & Pustulka, E. (2023). Measuring the Benefits of CI/CD Practices for Database Application Development. 2023 IEEE/ACM International Conference on Software and System Processes (ICSSP), 46-57. https://doi.org/10.1109/ICSSP59042.2023.00015

C:/Users/user/Desktop/docs/ug/thesis/answers/q/10/0.md

Question

How can monitoring systems be designed to minimize resource overhead while maintaining comprehensive coverage?

Summary

These studies suggest that monitoring systems can minimize resource overhead while maintaining comprehensive coverage by optimizing the placement and scheduling of monitoring nodes, utilizing behavior-level monitoring and adaptive measurement techniques, employing efficient algorithms for data processing, and leveraging statistical data and sampling methods to reduce redundancy and communication costs.

Related Searches

- What are effective strategies for optimizing monitoring systems?
- Resource monitoring in IoT networks
- Techniques for reducing monitoring overhead in computing environments

---

C:/Users/user/Desktop/docs/ug/thesis/answers/q/10/1.md

Title

Optimal proactive monitor placement & scheduling for IoT networks

Summary

The proposed model optimizes monitoring node placement and scheduling in IoT networks, ensuring full monitoring coverage with minimal energy consumption and communication overhead.

Reference: APA reference to the actual paper

Mostafa, B., Molnár, M., Saleh, M., Benslimane, A., & Kassem, S. (2021). Optimal proactive monitor placement & scheduling for IoT networks. Journal of the Operational Research Society, 73, 2431 - 2450. https://doi.org/10.1080/01605682.2021.1992310.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/10/10.md

Title

CeMon: A Cost-effective Flow Monitoring System in Software Defined Networks

Summary

CeMon, a low-cost high-accuracy monitoring system, reduces communication cost by up to 50% with negligible loss of accuracy using Maximum Coverage Polling Scheme (MCPS) and Adaptive Fine-grained Polling Scheme (AFPS).

Reference: APA reference to the actual paper

Su, Z., Wang, T., Xia, Y., & Hamdi, M. (2015). CeMon: A Cost-effective Flow Monitoring System in Software Defined Networks. ArXiv, abs/1710.05715. https://doi.org/10.1016/j.comnet.2015.09.018.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/10/2.md

Title

Connectivity preserving localized coverage algorithm for area monitoring using wireless sensor networks

Summary

The proposed solution maintains up to 95% coverage while consuming less energy, achieving up to 9.44J per unit time in a 2500m2 area.

Reference: APA reference to the actual paper

Misra, S., Kumar, M., & Obaidat, M. (2011). Connectivity preserving localized coverage algorithm for area monitoring using wireless sensor networks. Comput. Commun., 34, 1484-1496. https://doi.org/10.1016/j.comcom.2010.03.002.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/10/3.md

Title

HyperSight: Towards Scalable, High-Coverage, and Dynamic Network Monitoring Queries

Summary

HyperSight is a network traffic monitor with high coverage and low overheads, using Bloom Filter Queue (BFQ) and virtual BFQ for dynamic query compilation.

Reference: APA reference to the actual paper

Zhou, Y., Bi, J., Yang, T., Gao, K., Cao, J., Zhang, D., Wang, Y., & Zhang, C. (2020). HyperSight: Towards Scalable, High-Coverage, and Dynamic Network Monitoring Queries. IEEE Journal on Selected Areas in Communications, 38, 1147-1160. https://doi.org/10.1109/JSAC.2020.2986690.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/10/4.md

Title

Flexible resource monitoring of Java programs

Summary

SPASS-meter, a resource monitoring approach for Java and Android apps, combines comprehensive coverage with low overhead, achieving less than 3% processing power and 0.5% memory consumption in experiments.

Reference: APA reference to the actual paper

Eichelberger, H., & Schmid, K. (2014). Flexible resource monitoring of Java programs. J. Syst. Softw., 93, 163-186. https://doi.org/10.1016/j.jss.2014.02.022.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/10/5.md

Title

System-Level Resource Monitoring in High-Performance Computing Environments

Summary

Dproc system-level monitoring mechanisms efficiently monitor system-level events and notify remote hosts of relevant events, maintaining a balance between monitoring overheads and application quality.

Reference: APA reference to the actual paper

Agarwala, S., Poellabauer, C., Kong, J., Schwan, K., & Wolf, M. (2003). System-Level Resource Monitoring in High-Performance Computing Environments. Journal of Grid Computing, 1, 273-289. https://doi.org/10.1023/B:GRID.0000035189.80518.5d.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/10/6.md

Title

Reducing post-silicon coverage monitoring overhead with emulation and statistical analysis

Summary

Using a deterministic forward feature selection algorithm and statistical information, techniques can reduce the number of instrumented coverage monitors while maintaining comprehensive coverage.

Reference: APA reference to the actual paper

Gallardo, R. (2015). Reducing post-silicon coverage monitoring overhead with emulation and statistical analysis. . https://doi.org/10.14288/1.0166528.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/10/7.md

Title

Reducing post-silicon coverage monitoring overhead with emulation and Bayesian feature selection

Summary

Using emulation and Bayesian networks, a technique reduces the number of coverage monitors by 92% while maintaining over 98% probability that all coverage points are covered.

Reference: APA reference to the actual paper

Gallardo, R., Hu, A., Ivanov, A., & Mirian, M. (2015). Reducing post-silicon coverage monitoring overhead with emulation and Bayesian feature selection. 2015 IEEE/ACM International Conference on Computer-Aided Design (ICCAD), 816-823. https://doi.org/10.1109/ICCAD.2015.7372655.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/10/8.md

Title

Run-time monitoring with adjustable overhead using dataflow-guided filtering

Summary

The proposed architecture reduces overhead by trading off coverage, achieving 14-85% average coverage while trading off coverage for 1.5x the overhead.

Reference: APA reference to the actual paper

Lo, D., Chen, T., Ismail, M., & Suh, E. (2015). Run-time monitoring with adjustable overhead using dataflow-guided filtering. 2015 IEEE 21st International Symposium on High Performance Computer Architecture (HPCA), 662-674. https://doi.org/10.1109/HPCA.2015.7056071.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/10/9.md

Title

An Online Method for Minimizing Network Monitoring Overhead

Summary

Online adaptive measurement techniques using correlations in real networks can reduce monitoring overhead by 50% while maintaining comprehensive coverage.

Reference: APA reference to the actual paper

Silvestri, S., Urgaonkar, R., Zafer, M., & Ko, B. (2015). An Online Method for Minimizing Network Monitoring Overhead. 2015 IEEE 35th International Conference on Distributed Computing Systems, 268-277. https://doi.org/10.1109/ICDCS.2015.35.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/11/0.md

Question

What are the most effective methods for automating routine maintenance tasks in software systems?

Summary

Automating routine maintenance tasks in software systems can significantly reduce costs and improve efficiency. The most effective methods for automation involve leveraging existing tools and developing specialized methodologies tailored to specific needs.

Key Methods for Automating Maintenance Tasks

Database Management Automation: SQL Server provides robust tools such as SQL Server Agent, maintenance plans, and SQL Server Integration Services (SSIS) to automate routine database administration tasks. These tools help in scheduling, decision-making, and maintaining security, thereby reducing manual intervention and maintenance burden .

Adaptive Maintenance Automation: High-level specifications and generative techniques can automate adaptive maintenance tasks. This approach is effective in diverse domains like high-performance computing and enterprise software, using tools like MPI Serializer and Rosemari for specific tasks such as marshaling logic generation and upgrading legacy applications .

Legacy Code Migration: Automating the migration of legacy C/C++ test code can mitigate risks associated with manual maintenance, such as errors and productivity loss. This involves automating analysis and transformation processes, although it requires developing bespoke tools for specific tasks .

Software Refactoring: Automated refactoring processes, particularly search-based refactoring, are gaining popularity for efficiently updating software design and code. This reduces the time and effort required for maintenance tasks .

Robotic Automation for Maintenance: In manufacturing, autonomous robot systems can automate maintenance tasks by planning manipulation tasks and paths using CAD and vision data. This approach compensates for environmental uncertainties and reduces planning time .

Conclusion

Effective automation of routine maintenance tasks in software systems involves using specialized tools and methodologies tailored to specific domains and tasks. From database management to adaptive maintenance and robotic automation, these methods help reduce manual effort, minimize errors, and improve overall efficiency.

Related Searches

- What are the benefits of automating software maintenance tasks?
- Techniques for automating software maintenance processes
- Tools for automated software maintenance management

C:/Users/user/Desktop/docs/ug/thesis/answers/q/11/1.md

Title

Automating Maintenance Routines

Summary

Harnessing SQL Server Agent, maintenance plans, and SSIS can reduce the maintenance burden on your time and effort.

Reference: APA reference to the actual paper

Carter, P. (2015). Automating Maintenance Routines. , 773-858. https://doi.org/10.1007/978-1-4842-0710-9_21.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/11/10.md

Title

Efficient Task and Path Planning for Maintenance Automation Using a Robot System

Summary

This paper presents an efficient approach for autonomous robot systems to plan maintenance tasks and paths, using CAD and vision data, to reduce planning effort and improve maintenance automation in manufacturing systems.

Reference: APA reference to the actual paper

Friedrich, C., Csiszar, A., Lechler, A., & Verl, A. (2018). Efficient Task and Path Planning for Maintenance Automation Using a Robot System. IEEE Transactions on Automation Science and Engineering, 15, 1205-1215. https://doi.org/10.1109/TASE.2017.2759814.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/11/2.md

Title

Automated Adaptive Software Maintenance: A Methodology and Its Applications

Summary

Combining high-level specifications and generative techniques can effectively automate adaptive maintenance tasks in diverse domains like high-performance computing and enterprise software.

Reference: APA reference to the actual paper

Tansey, W. (2008). Automated Adaptive Software Maintenance: A Methodology and Its Applications.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/11/3.md

Title

Large-scale semi-automated migration of legacy C/C++ test code

Summary

Automating analysis and transformations can help avoid mistakes and rework in large-scale software maintenance tasks.

Reference: APA reference to the actual paper

Schuts, M., Aarssen, R., Tielemans, P., & Vinju, J. (2022). Large-scale semi-automated migration of legacy C/C++ test code. Software: Practice and Experience, 52, 1543 - 1580. https://doi.org/10.1002/spe.3082.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/11/4.md

Title

Automating Routine Maintenance

Summary

Using features like Database Mail and SQL Server Agent can automate maintenance tasks and give DBAs more free time to work on other projects.

Reference: APA reference to the actual paper

Simmons, K., & Carstarphen, S. (2012). Automating Routine Maintenance. , 319-352. https://doi.org/10.1007/978-1-4302-3916-1_12.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/11/5.md

Title

Capturing, classification and concept generation for automated maintenance tasks

Summary

A novel methodology for capturing, classifying, and conceptualizing platforms for automating maintenance tasks in software systems is proposed.

Reference: APA reference to the actual paper

Farnsworth, M., & Tomiyama, T. (2014). Capturing, classification and concept generation for automated maintenance tasks. Cirp Annals-manufacturing Technology, 63, 149-152. https://doi.org/10.1016/J.CIRP.2014.03.093.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/11/6.md

Title

Towards Automating Software Maintainance

Summary

A methodological framework for program maintenance and detailed techniques for specific maintenance tasks are discussed.

Reference: APA reference to the actual paper

Jarzabek, S., & Tham, K. (1991). Towards Automating Software Maintainance. , 336-355. https://doi.org/10.1007/3-540-54059-8_93.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/11/7.md

Title

An Automated Software Maintenance Tool for Large-Scale Operating Systems.

Summary

The method described in the paper automates many tasks involved in maintaining large computer operating systems and can be used in other programming applications.

Reference: APA reference to the actual paper

Zirkle, A. (1978). An Automated Software Maintenance Tool for Large-Scale Operating Systems.. .

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/11/8.md

Title

Automated support of software maintenance

Summary

MACS and REDO projects use expert system technology and integratable tools to provide automated assistance for software maintenance tasks.

Reference: APA reference to the actual paper

Bennett, K. (1991). Automated support of software maintenance. Information & Software Technology, 33, 74-85. https://doi.org/10.1016/0950-5849(91)90026-8.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/11/9.md

Title

Automatic software refactoring: a systematic literature review

Summary

Automatic software refactoring is gaining popularity, with most papers focusing on code refactoring, and search-based refactoring becoming more popular for quick and efficient refactoring.

Reference: APA reference to the actual paper

Baqais, A., & Alshayeb, M. (2019). Automatic software refactoring: a systematic literature review. Software Quality Journal, 28, 459 - 502. https://doi.org/10.1007/s11219-019-09477-y.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/12/0.md

Question

How can predictive analytics be used to anticipate and prevent system failures?

Summary

These studies suggest that predictive analytics can be used to anticipate and prevent system failures by employing machine learning models, unsupervised approaches, and predictive maintenance techniques to analyze system metrics, network events, and sensor data, allowing for timely identification and localization of potential failures.

Concensus Link

Related Searches

- What are the benefits of predictive maintenance in manufacturing?
- Predictive analytics in software failure prevention
- (yes/no query icon) Does predictive analytics enhance system reliability?

C:/Users/user/Desktop/docs/ug/thesis/answers/q/12/1.md

Title

Predicting Failures in Multi-Tier Distributed Systems

Summary

PreMiSE blends anomaly-based and signature-based techniques to predict failures and locate corresponding faults in multi-tier distributed systems with high precision and low false positive rate.

Reference: APA reference to the actual paper

Mariani, L., Pezzè, M., Riganelli, O., & Xin, R. (2019). Predicting Failures in Multi-Tier Distributed Systems. J. Syst. Softw., 161. https://doi.org/10.1016/j.jss.2019.110464.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/12/10.md

Title

PREDICTIVE ANALYTICS FOR INDUSTRY 4.0

Summary

Predictive analytics can be used to anticipate and prevent system failures by analyzing time-series data (temperature, pressure, vibration) received from sensors embedded in machines and equipment.

Reference: APA reference to the actual paper

Bezobrazov, A., M.Sc.Anfilets, S., , D., & , Y. (2019). PREDICTIVE ANALYTICS FOR INDUSTRY 4.0. , 4, 273-276.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/12/2.md

Title

Prevent: An Unsupervised Approach to Predict Software Failures in Production

Summary

Prevent, a fully unsupervised approach, provides more stable, reliable, and timely predictions than supervised learning approaches for anticipating and preventing system failures.

Reference: APA reference to the actual paper

Denaro, G., Heydarov, R., Mohebbi, A., & Pezzè, M. (2022). Prevent: An Unsupervised Approach to Predict Software Failures in Production. IEEE Transactions on Software Engineering, 49, 5139-5153. https://doi.org/10.1109/TSE.2023.3327583.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/12/3.md

Title

Applying Event Stream Processing to Network Online Failure Prediction

Summary

Predictive analytics can be used to anticipate and prevent system failures by using machine learning and predictive analytics techniques, such as online failure prediction (OFP) techniques, on computer network data.

Reference: APA reference to the actual paper

Dueñas, J., Navarro, J., HugoA.Parada, G., Jimenez, J., & Cuadrado, F. (2018). Applying Event Stream Processing to Network Online Failure Prediction. IEEE Communications Magazine, 56, 166-170. https://doi.org/10.1109/MCOM.2018.1601135.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/12/4.md

Title

Improving software project outcomes through predictive analytics: Part 1

Summary

Predictive analytics can be used to accurately predict software project outcomes of failure or success, improving software project success rates and minimizing risks in systems engineering efforts.

Reference: APA reference to the actual paper

Guillaume-Joseph, G., & Wasek, J. (2015). Improving software project outcomes through predictive analytics: Part 1. IEEE Engineering Management Review, 43, 26-38. https://doi.org/10.1109/EMR.2015.2469451.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/12/5.md

Title

Predictive maintenance based on event-log analysis: A case study

Summary

Predictive analytics can be used to anticipate and prevent system failures by using a classification-based method, which analyzes event-log data to identify the most important features for model construction.

Reference: APA reference to the actual paper

Wang, J., Li, C., Han, S., Sarkar, S., & Zhou, X. (2017). Predictive maintenance based on event-log analysis: A case study. IBM J. Res. Dev., 61, 11:121-11:132. https://doi.org/10.1147/JRD.2017.2648298.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/12/6.md

Title

Online Failure Prediction for Complex Systems: Methodology and Case Studies

Summary

Predictive analytics can be used to anticipate and prevent system failures by creating models that can predict different types of incoming failures, using a well-defined process and considering operational requirements.

Reference: APA reference to the actual paper

Campos, J., Costa, E., & Vieira, M. (2023). Online Failure Prediction for Complex Systems: Methodology and Case Studies. IEEE Transactions on Dependable and Secure Computing, 20, 3520-3534. https://doi.org/10.1109/TDSC.2022.3192671.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/12/7.md

Title

Predictive maintenance: strategic use of IT in manufacturing organizations

Summary

Predictive maintenance uses real-time data and predictive analytics algorithms to dynamically manage preventive maintenance policies in manufacturing organizations.

Reference: APA reference to the actual paper

March, S., & Scudder, G. (2017). Predictive maintenance: strategic use of IT in manufacturing organizations. Information Systems Frontiers, 21, 327 - 341. https://doi.org/10.1007/s10796-017-9749-z.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/12/8.md

Title

Predictive algorithms in the management of computer systems

Summary

Predictive algorithms can be used to anticipate and prevent system failures by estimating performance variables and predicting critical events like router failure.

Reference: APA reference to the actual paper

Vilalta, R., Apté, C., Hellerstein, J., , S., & Weiss, S. (2002). Predictive algorithms in the management of computer systems. IBM Syst. J., 41, 461-474. https://doi.org/10.1147/sj.413.0461.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/12/9.md

Title

Adoption of machine learning technology for failure prediction in industrial maintenance: A systematic review

Summary

Predictive analytics can be used to anticipate and prevent system failures by using machine learning technology for failure prediction in industrial maintenance.

Reference: APA reference to the actual paper

Leukel, J., González, J., & Riekert, M. (2021). Adoption of machine learning technology for failure prediction in industrial maintenance: A systematic review. Journal of Manufacturing Systems. https://doi.org/10.1016/j.jmsy.2021.08.012.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/13/0.md

Question

What strategies can be employed to simplify the maintenance of legacy systems without extensive refactoring?

Summary

These studies suggest that strategies such as model-learning, automated refactoring tools, anticipated test design, and re-implementation can simplify the maintenance of legacy systems without extensive refactoring.

Concensus Link

Related Searches

- What are effective methods for maintaining legacy systems?
- Strategies for refactoring legacy software
- Best practices in legacy system maintenance

C:/Users/user/Desktop/docs/ug/thesis/answers/q/13/1.md

Title

Refactoring A Practical Application of Model Learning and Code Generation

Summary

A combination of model-learning, test-generation, and code generation can reduce the risk of refactoring software and improve software maintainability.

Reference: APA reference to the actual paper

Van Der Meijde, G. (2018). Refactoring A Practical Application of Model Learning and Code Generation. .

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/13/10.md

Title

Refactoring for changeability: a way to go?

Summary

Refactoring in legacy systems significantly reduces customer reported defects and effort needed to make changes, improving changeability and reducing overall maintenance costs.

Reference: APA reference to the actual paper

Geppert, B., Mockus, A., & Rößler, F. (2005). Refactoring for changeability: a way to go?. 11th IEEE International Software Metrics Symposium (METRICS'05), 10 pp.-13. https://doi.org/10.1109/METRICS.2005.40.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/13/2.md

Title

Pattern-Based Refactoring of Legacy Software Systems

Summary

An approach using pattern-based transformations can automatically perform refactoring tasks in legacy software systems, leading to a less coupled architecture.

Reference: APA reference to the actual paper

Hunold, S., Krellner, B., Rauber, T., Reichel, T., & Rünger, G. (2009). Pattern-Based Refactoring of Legacy Software Systems. , 78-89. https://doi.org/10.1007/978-3-642-01347-8_7.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/13/3.md

Title

The anticipated test design and its use in legacy code refactoring: Lessons learned from a real experiment

Summary

Using an anticipated test design methodology, where unit tests are first created to each module/class/methods before their modification, helps ensure the correct performance of functions after refactoring.

Reference: APA reference to the actual paper

Siebra, C., Gouveia, T., Sodre, L., Silva, F., & Santos, A. (2016). The anticipated test design and its use in legacy code refactoring: Lessons learned from a real experiment. 2016 International Conference on Information Technology for Organizations Development (IT4OD), 1-6. https://doi.org/10.1109/IT4OD.2016.7479256.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/13/4.md

Title

Utilizing Operational Profile in Refactoring Large Scale Legacy Systems

Summary

Using a markov chain model can help identify system components of greatest interest for refactoring, potentially decreasing future maintenance costs.

Reference: APA reference to the actual paper

Koru, A., , L., & Li, Z. (2003). Utilizing Operational Profile in Refactoring Large Scale Legacy Systems. .

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/13/5.md

Title

Refactoring of Legacy Software Using Model Learning and Equivalence Checking: An Industrial Experience Report

Summary

Model learning and equivalence checking can help rejuvenate legacy embedded software, such as control components, without extensive refactoring.

Reference: APA reference to the actual paper

Schuts, M., Hooman, J., & Vaandrager, F. (2016). Refactoring of Legacy Software Using Model Learning and Equivalence Checking: An Industrial Experience Report. , 311-325. https://doi.org/10.1007/978-3-319-33693-0_20.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/13/6.md

Title

Working Effectively with Legacy Code

Summary

Strategies for working more effectively with legacy code include understanding software change mechanics, writing tests, and using dependency-breaking techniques for safer changes.

Reference: APA reference to the actual paper

Feathers, M. (2004). Working Effectively with Legacy Code. , 217. https://doi.org/10.1007/978-3-540-27777-4_42.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/13/7.md

Title

A Refactoring Classification Framework for Efficient Software Maintenance

Summary

This research presents a novel framework for classifying refactoring techniques based on their measurable influence on internal quality attributes, enabling developers to make informed decisions and select suitable techniques to enhance specific aspects of their software.

Reference: APA reference to the actual paper

Almogahed, A., Mahdin, H., Omar, M., Zakaria, N., Mostafa, S., Alqahtani, S., Pathak, P., Shaharudin, S., & Hidayat, R. (2023). A Refactoring Classification Framework for Efficient Software Maintenance. IEEE Access, 11, 78904-78917. https://doi.org/10.1109/ACCESS.2023.3298678.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/13/8.md

Title

Search-based refactoring for software maintenance

Summary

This research presents a software tool that automatically improves object-oriented programs' design quality by refactoring them using search-based techniques, reducing software maintenance costs.

Reference: APA reference to the actual paper

O'Keeffe, M., & Cinnéide, M. (2008). Search-based refactoring for software maintenance. J. Syst. Softw., 81, 502-516. https://doi.org/10.1016/j.jss.2007.06.003.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/13/9.md

Title

Re-implementing a legacy system

Summary

Re-implementation is a compromise solution for legacy software migration, preserving functionality while changing technical implementation, and is supported by tools like refactoring and code refactoring.

Reference: APA reference to the actual paper

Sneed, H., & Verhoef, C. (2019). Re-implementing a legacy system. J. Syst. Softw., 155, 162-184. https://doi.org/10.1016/J.JSS.2019.05.012.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/14/0.md

Question

How does the implementation of continuous integration/continuous deployment (CI/CD) pipelines affect the long-term maintainability of a software system?

Summary

These studies suggest that the implementation of CI/CD pipelines enhances the long-term maintainability of software systems by improving release speed, code quality, and collaboration, while also addressing challenges such as system complexity and deployment reliability.

Concensus Link

Related Searches

- What are the benefits of CI/CD for software maintainability?
- Challenges in implementing CI/CD pipelines
- CI/CD tools and practices for software development

C:/Users/user/Desktop/docs/ug/thesis/answers/q/14/1.md

Title

Continuous Integration, Delivery and Deployment: A Systematic Review on Approaches, Tools, Challenges and Practices

Pointer: Points to Local Extracted Version

q/2/6.md

C:/Users/user/Desktop/docs/ug/thesis/answers/q/14/10.md

Title

Continuous Integration and Delivery Practices for Cyber-Physical Systems: An Interview-Based Study

Summary

Continuous Integration and Delivery practices can improve Cyber-Physical System development, but face challenges in balancing hardware-in-the-loop and simulators, overcoming software deployment difficulties, and combining hardware/software expertise in development teams.

Reference: APA reference to the actual paper

Zampetti, F., Tamburri, D., Panichella, S., Panichella, A., Canfora, G., & Penta, M. (2022). Continuous Integration and Delivery Practices for Cyber-Physical Systems: An Interview-Based Study. ACM Transactions on Software Engineering and Methodology, 32, 1 - 44. https://doi.org/10.1145/3571854.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/14/2.md

Title

Method for Continuous Integration and Deployment Using a Pipeline Generator for Agile Software Projects

Summary

Pipeline approach thinking in continuous integration and continuous delivery improves project efficiency, stability, deliverability, quality, and productivity.

Reference: APA reference to the actual paper

Donca, I., Stan, O., Misaros, M., Goța, D., & Miclea, L. (2022). Method for Continuous Integration and Deployment Using a Pipeline Generator for Agile Software Projects. Sensors (Basel, Switzerland), 22. https://doi.org/10.3390/s22124637.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/14/3.md

Title

Continuous Integration and Continuous Deployment (CI/CD) Optimization

Summary

Optimizing CI/CD processes through techniques like parallelization, dependency caching, and incremental builds can minimize deployment times while maintaining system reliability.

Reference: APA reference to the actual paper

Gujar, S., & Patil, S. (2024). Continuous Integration and Continuous Deployment (CI/CD) Optimization. International Journal of Innovative Science and Research Technology (IJISRT). https://doi.org/10.38124/ijisrt/ijisrt24oct014.

Concensus Link

Outcome

Deployment times, system reliability.

Reference: APA reference to the actual paper

Optimizing CI/CD pipelines reduces deployment times and maintains system reliability.

C:/Users/user/Desktop/docs/ug/thesis/answers/q/14/4.md

Title

Towards a Theory on Architecting for Continuous Deployment

Summary

Adequate software architecture plays a crucial role in enabling continuous delivery, supporting operations, continuous evolution, and improving deployability.

Reference: APA reference to the actual paper

França, B., Santos, P., & Matalonga, S. (2021). Towards a Theory on Architecting for Continuous Deployment. ArXiv, abs/2108.09571.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/14/5.md

Title

Quality Maintenance and Monitoring using Azure CI pipeline and .Net Technologies

Summary

Azure CI pipeline and.Net technologies enable continuous quality maintenance and monitoring of applications, enhancing DevOps practices and enhancing company growth and performance.

Reference: APA reference to the actual paper

Ishwarya, S., & Kuzhalvaimozhi, S. (2020). Quality Maintenance and Monitoring using Azure CI pipeline and .Net Technologies. , 642-648. https://doi.org/10.32628/cseit2063166.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/14/6.md

Title

Continuous software engineering: A roadmap and agenda

Summary

Continuous software engineering, incorporating 'Continuous Star' activities, can improve reliability and resilience in complex systems.

Reference: APA reference to the actual paper

Fitzgerald, B., & Stol, K. (2017). Continuous software engineering: A roadmap and agenda. J. Syst. Softw., 123, 176-189. https://doi.org/10.1016/j.jss.2015.06.063.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/14/7.md

Title

Method for Continuous Integration and Deployment Using a Pipeline Generator for Agile Software Projects

Summary

Continuous integration and continuous delivery pipelines improve delivery timeline, test load steps, and benchmarking tasks, increasing stability, deliverability, and productivity in Agile software projects.

Reference: APA reference to the actual paper

Muppa, N. (2023). Method for Continuous Integration and Deployment Using a Pipeline Generator for Agile Software Projects. Journal of Engineering and Applied Sciences Technology. https://doi.org/10.47363/jeast/2023(5)256.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/14/8.md

Title

Pipeline Orchestration Framework for Continuous Integration and Continuous Deployment

Summary

Continuous integration and continuous delivery processes help enterprises maintain software code quality and ensure reliable and predictable delivery.

Reference: APA reference to the actual paper

Rathod, N., & Surve, A. (2015). Pipeline Orchestration Framework for Continuous Integration and Continuous Deployment. Software Engineering and Technology, 7, 98-102.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/14/9.md

Title

Applying Unsupervised Machine Learning in Continuous Integration, Security and Deployment Pipeline Automation for Application Software System

Summary

Adapting Continuous Integration - Continuous Deployment (CICD) methodology improves code quality, finds vulnerabilities, and saves time by automating deployment, while machine learning helps predict defects, failures, and trends.

Reference: APA reference to the actual paper

Raj, D. (2019). Applying Unsupervised Machine Learning in Continuous Integration, Security and Deployment Pipeline Automation for Application Software System. International Journal of Recent Technology and Engineering. https://doi.org/10.35940/ijrte.d7387.118419.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/15/0.md

Question

What role does documentation play in the ease of maintaining complex software systems?

Summary

These studies suggest that documentation plays a crucial role in maintaining complex software systems by aiding program comprehension, improving maintainability, and supporting error detection and repair, although its effectiveness can be influenced by its quality, completeness, and the strategies used by maintainers.

Concensus Link

Related Searches

- How does documentation impact software maintenance efficiency?
- Best practices for software documentation in maintenance
- The importance of documentation in software development

C:/Users/user/Desktop/docs/ug/thesis/answers/q/15/1.md

Title

A study of the documentation essential to software maintenance

Summary

A survey of software maintainers found that the most useful documentation artifacts are those that help maintainers reach their goals.

Reference: APA reference to the actual paper

De Souza, S., Anquetil, N., & Oliveira, K. (2005). A study of the documentation essential to software maintenance. , 68-75. https://doi.org/10.1145/1085313.1085331.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/15/10.md

Title

Information hiding, knowledge clustering approach to software maintenance

Summary

Program design and system documentation play a crucial role in the ease of maintaining complex software systems, with proper system documentation alleviating problems faced in maintaining the software.

Reference: APA reference to the actual paper

Rahardja, A. (1994). Information hiding, knowledge clustering approach to software maintenance. Proceedings of TENCON'94 - 1994 IEEE Region 10's 9th Annual International Conference on: 'Frontiers of Computer Technology', 997-1001 vol.2. https://doi.org/10.1109/TENCON.1994.369161.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/15/2.md

Title

The state of documentation practice within corrective maintenance

Summary

Documentation plays a crucial role in making complex software systems more maintainable by easing learning and relearning processes and providing a comprehensive understanding for maintainers.

Reference: APA reference to the actual paper

Kajko-Mattsson, M. (2001). The state of documentation practice within corrective maintenance. Proceedings IEEE International Conference on Software Maintenance. ICSM 2001, 354-363. https://doi.org/10.1109/ICSM.2001.972748.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/15/3.md

Title

Helping Program Comprehension of Large Software Systems by Identifying Their Most Important Classes

Summary

An executive summary, highlighting the most important elements of the system, can make processing large amounts of detailed documentation easier for maintaining complex software systems.

Reference: APA reference to the actual paper

Sora, I. (2015). Helping Program Comprehension of Large Software Systems by Identifying Their Most Important Classes. , 122-140. https://doi.org/10.1007/978-3-319-30243-0_7.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/15/4.md

Title

Understanding documentation value in software maintenance

Summary

Effective documentation in software maintenance involves reliance on source code, characteristics of useful documents, and interplay between people and documentation.

Reference: APA reference to the actual paper

Das, S., Lutters, W., & Seaman, C. (2007). Understanding documentation value in software maintenance. , 2. https://doi.org/10.1145/1234772.1234790.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/15/5.md

Title

Which documentation for software maintenance?

Summary

A survey of software maintainers found that certain documentation artifacts are the most important for ease of maintaining complex software systems.

Reference: APA reference to the actual paper

De Souza, S., Anquetil, N., & Oliveira, K. (2006). Which documentation for software maintenance?. Journal of the Brazilian Computer Society, 12, 31-44. https://doi.org/10.1007/BF03194494.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/15/6.md

Title

Importance of Software Documentation

Summary

Software documentation plays significant roles in software development environment and system maintenance, improving the quality of a software product.

Reference: APA reference to the actual paper

Kipyegen, N., & Korir, W. (2013). Importance of Software Documentation. .

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/15/7.md

Title

Report on a Controlled Experiment on the Impact of Software documentation for Perfective Maintenance

Summary

Software documentation improves implementation quality and makes it easier for in-experienced maintainers to produce high-quality codes, but its benefits are mainly measured by how much time it can save maintainers.

Reference: APA reference to the actual paper

Zhi, J., & Wu, H. (2013). Report on a Controlled Experiment on the Impact of Software documentation for Perfective Maintenance. .

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/15/8.md

Title

Improving Software Dependability through Documentation Analysis

Summary

Leveraging existing documentation helps detect software bugs, repair corrupted files, and improve a system's reliability and maintainability.

Reference: APA reference to the actual paper

Wong, E. (2019). Improving Software Dependability through Documentation Analysis. .

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/15/9.md

Title

Analysis of the Documentation of ERP Software Projects

Summary

High quality software documentation is crucial for supporting adoption and executing maintenance activities in complex software systems like ERP.

Reference: APA reference to the actual paper

Aversano, L., Guardabascio, D., & Tortorella, M. (2017). Analysis of the Documentation of ERP Software Projects. , 423-430. https://doi.org/10.1016/J.PROCS.2017.11.057.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/16/0.md

Question

How can integrated DevOps practices streamline deployment, monitoring, and maintenance workflows?

Summary

These studies suggest that integrated DevOps practices streamline deployment, monitoring, and maintenance workflows by enhancing collaboration, automating processes, and improving efficiency and reliability through continuous integration, continuous delivery, and continuous deployment.

Concensus Link

Related Searches

- What are the benefits of adopting DevOps practices?
- Tools for automating deployment in DevOps.
- Best practices for continuous integration in software development.

C:/Users/user/Desktop/docs/ug/thesis/answers/q/16/1.md

Title

DevOps in the Cloud: Streamlining Software Delivery and Deployment

Summary

Integrated DevOps practices with cloud technologies can streamline software delivery and deployment, driving innovation and competitiveness in the digital age.

Reference: APA reference to the actual paper

Chauhan, A. (2024). DevOps in the Cloud: Streamlining Software Delivery and Deployment. International Journal of Advanced Research in Science, Communication and Technology. https://doi.org/10.48175/ijarsct-17837.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/16/10.md

Title

DevOps and continuous integration/continuous deployment (CI/CD) automation

Summary

Integrated DevOps practices streamline processes, boost release efficiency, and integrate development and IT operations for a more synergistic and responsive approach to the software lifecycle.

Reference: APA reference to the actual paper

Ali, J. (2023). DevOps and continuous integration/continuous deployment (CI/CD) automation. Advances in Engineering Innovation. https://doi.org/10.54254/2977-3903/4/2023031.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/16/2.md

Title

DevOps workflow optimization: Enhancing deployment and efficiency for cloud application

Summary

Integrated DevOps practices can streamline deployment, monitoring, and maintenance workflows by automating work, integrating and deploying processes, and improving product quality.

Reference: APA reference to the actual paper

Pareek, D., & K, P. (2024). DevOps workflow optimization: Enhancing deployment and efficiency for cloud application. World Journal of Advanced Engineering Technology and Sciences. https://doi.org/10.30574/wjaets.2024.13.1.0361.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/16/3.md

Title

DevOps, Continuous Integration and Continuous Deployment Methods for Software Deployment Automation

Summary

Integrated DevOps practices, such as Continuous Integration and Continuous Deployment, can streamline deployment, monitoring, and maintenance workflows by enhancing collaboration, shortening release cycles, and increasing deployment frequency.

Reference: APA reference to the actual paper

Istifarulah, M., & Tiaharyadini, R. (2023). DevOps, Continuous Integration and Continuous Deployment Methods for Software Deployment Automation. JISA(Jurnal Informatika dan Sains). https://doi.org/10.31326/jisa.v6i2.1751.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/16/4.md

Title

Applying DevOps Practices of Continuous Automation for Machine Learning

Summary

Integrated DevOps practices, such as continuous integration and continuous delivery, can minimize waste, support rapid feedback loops, and improve value delivery and maintenance in machine learning applications.

Reference: APA reference to the actual paper

Karamitsos, I., Albarhami, S., & Apostolopoulos, C. (2020). Applying DevOps Practices of Continuous Automation for Machine Learning. Inf., 11, 363. https://doi.org/10.3390/info11070363.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/16/5.md

Title

An Efficient Framework for Integrating DevOps Practices in Network Configuration and Monitoring

Summary

Integrating DevOps practices in network configuration and monitoring can reduce network downtime and increase efficiency and productivity by prioritizing continuous monitoring via observability and SDN controllers.

Reference: APA reference to the actual paper

Jose, J., & Shenoy, G. (2024). An Efficient Framework for Integrating DevOps Practices in Network Configuration and Monitoring. 2024 3rd International Conference for Innovation in Technology (INOCON), 1-6. https://doi.org/10.1109/INOCON60754.2024.10512008.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/16/6.md

Title

Continuous Integration, Delivery and Deployment: A Systematic Review on Approaches, Tools, Challenges and Practices

Summary

Continuous practices in software development can reduce build and test time, increase visibility, and address security and scalability issues, but future research is needed to address contextual information, system architecture, and secure deployment pipelines.

Reference: APA reference to the actual paper

Shahin, M., Babar, M., & Zhu, L. (2017). Continuous Integration, Delivery and Deployment: A Systematic Review on Approaches, Tools, Challenges and Practices. IEEE Access, 5, 3909-3943. https://doi.org/10.1109/ACCESS.2017.2685629.

Concensus Link

Method

Systematic Review

Outcome

Approaches and tools for continuous software development practices.

Reference: APA reference to the actual paper

Identified 30 approaches and tools to improve continuous integration and deployment practices.

C:/Users/user/Desktop/docs/ug/thesis/answers/q/16/7.md

Title

Streamlining Development: Best Practices for Salesforce DevOps and Continuous Integration

Summary

Integrated DevOps practices in Salesforce environments can optimize workflows, ensure successful deployments, and address challenges like metadata management, version control, and automated testing.

Reference: APA reference to the actual paper

Patel, A. (2024). Streamlining Development: Best Practices for Salesforce DevOps and Continuous Integration. Journal of Mathematical & Computer Applications. https://doi.org/10.47363/jmca/2024(3)e110.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/16/8.md

Title

Adopting Continuous Integration Practices to Achieve Quality in DevOps

Summary

Adopting continuous integration practices in DevOps can improve software quality through faster release, monitoring performance, reduced risk, and faster feedback loops.

Reference: APA reference to the actual paper

Dhakad, K. (2023). Adopting Continuous Integration Practices to Achieve Quality in DevOps. International Journal of Advanced Research in Science, Communication and Technology. https://doi.org/10.48175/ijarsct-8368.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/16/9.md

Title

Quality Maintenance and Monitoring using Azure CI pipeline and .Net Technologies

Summary

Integrated DevOps practices, such as Continuous integration, Continuous delivery, and Continuous deployment, automate build, test, and deployment of software, ensuring high performance and quality

assurance products.

Reference: APA reference to the actual paper

Ishwarya, S., & Kuzhalvaimozhi, S. (2020). Quality Maintenance and Monitoring using Azure CI pipeline and .Net Technologies. , 642-648. https://doi.org/10.32628/cseit2063166.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/17/0.md

Question

What is the relationship between system monitoring data and proactive maintenance activities?

Summary

These studies suggest that system monitoring data is crucial for proactive maintenance activities as it enables the prediction of equipment failures, optimization of maintenance schedules, and reduction of operational costs through advanced data analytics and machine learning techniques.

Concensus Link

Related Searches

- How does system monitoring enhance proactive maintenance?
- Predictive maintenance strategies in industrial systems
- Data analysis for proactive maintenance optimization

C:/Users/user/Desktop/docs/ug/thesis/answers/q/17/1.md

Title

Deep-Learning-Driven Proactive Maintenance Management of IoT-Empowered Smart Toilet

Summary

IoT monitoring systems collect data on operating and ambient conditions, which can be used to optimize maintenance schedules through a deep learning model like the convolutional bidirectional long short-term memory (CBLM) model.

Reference: APA reference to the actual paper

See-To, E., Wang, X., Lee, K., Wong, M., & Dai, H. (2023). Deep-Learning-Driven Proactive Maintenance Management of IoT-Empowered Smart Toilet. IEEE Internet of Things Journal, 10, 2417-2429. https://doi.org/10.1109/JIOT.2022.3211889.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/17/10.md

Title

Implementation of Maintenance Decision for Equipment Considering Condition Monitoring Information

Summary

Proactive maintenance decision-making based on condition monitoring information can effectively utilize large amounts of information and less current system state information.

Reference: APA reference to the actual paper

Ding, F., & He, Z. (2010). Implementation of Maintenance Decision for Equipment Considering Condition Monitoring Information. 2010 International Conference on E-Product E-Service and E-Entertainment, 1-4. https://doi.org/10.1109/ICEEE.2010.5660924.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/17/2.md

Title

A decision support framework for proactive maintenance of water and wastewater systems

Summary

System monitoring data can be used to estimate the likelihood of failure or malfunction in components, allowing for optimal preventative maintenance or component replacement.

Reference: APA reference to the actual paper

Nieradzinska, K., Tachtatzis, C., Atkinson, R., Konka, J., Seeam, A., Stanković, L., Andonovic, I., White, R., Haffey, M., & Cleary, A. (2015). A decision support framework for proactive maintenance of water and wastewater systems. .

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/17/3.md

Title

THE GENETIC FUZZY BASED PROACTIVE MAINTENANCE OF A TECHNICAL OBJECT

Summary

System monitoring data, such as failure history and user-defined knowledge, is used to design predictive fuzzy models of time between failures, aiding in planning preventive and corrective operations.

Reference: APA reference to the actual paper

Smoczek, J., & Szpytko, J. (2015). THE GENETIC FUZZY BASED PROACTIVE MAINTENANCE OF A TECHNICAL OBJECT. Journal of KONES, 19, 399-405. https://doi.org/10.5604/12314005.1138153.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/17/4.md

Title

Convert operational data into maintenance savings

Summary

System monitoring data from electrical protective relays can improve operation and maintenance efficiencies, reducing unscheduled downtime and increasing maintenance effectiveness.

Reference: APA reference to the actual paper

Zeller, M. (2014). Convert operational data into maintenance savings. 2014 IEEE Rural Electric Power Conference (REPC), B6-1-B6-10. https://doi.org/10.1109/REPCON.2014.6842205.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/17/5.md

Title

Innovative Data Driven Proactive Maintenance of Basic Process Control Systems

Summary

The advanced data analytics software solution automatically monitors PCS performance and provides early diagnosis/prescription of each control loop, transforming reactive maintenance into proactive maintenance.

Reference: APA reference to the actual paper

Jaffer, A., & Kumar, M. (2020). Innovative Data Driven Proactive Maintenance of Basic Process Control Systems. . https://doi.org/10.2118/202610-ms.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/17/6.md

Title

Performance Monitoring of Wind Turbines Gearbox Utilising Artificial Neural Networks — Steps toward Successful Implementation of Predictive Maintenance Strategy

Summary

Proactive maintenance activities using performance monitoring data can reduce unplanned shutdowns, maintenance costs, and fatal events in wind turbines.

Reference: APA reference to the actual paper

Shaheen, B., & Németh, I. (2023). Performance Monitoring of Wind Turbines Gearbox Utilising Artificial Neural Networks — Steps toward Successful Implementation of Predictive Maintenance Strategy. Processes. https://doi.org/10.3390/pr11010269.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/17/7.md

Title

Recent trends and challenges in predictive maintenance of aircraft's engine and hydraulic system

Summary

Predictive maintenance strategies based on real-time data help diagnose impending failure and prognosis of machine health, increasing reliability and safety in the aviation industry.

Reference: APA reference to the actual paper

Khan, K., Sohaib, M., Rashid, A., Ali, S., Akbar, H., Basit, A., & Ahmad, T. (2021). Recent trends and challenges in predictive maintenance of aircraft's engine and hydraulic system. Journal of the Brazilian Society of Mechanical Sciences and Engineering, 43. https://doi.org/10.1007/s40430-021-03121-2.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/17/8.md

Title

Cyber Physical System based Proactive Collaborative Maintenance MANTIS D 1 . 2 Consolidated State-ofthe-Art of Sensor-based Proactive Maintenance Appendix 13 : Fault detection and identification in PV systems

Summary

Proactive maintenance of PV plants requires advanced utilization of monitored data for fault detection and identification.

Reference: APA reference to the actual paper

(2016). Cyber Physical System based Proactive Collaborative Maintenance MANTIS D 1 . 2 Consolidated State-ofthe-Art of Sensor-based Proactive Maintenance Appendix 13 : Fault detection and identification in PV systems. .

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/17/9.md

Title

A Proactive Maintenance Scheme for Wireless Systems

Summary

Proactive maintenance schemes for wireless systems use online monitoring systems to identify performance degradation and possible sources, ensuring maintenance occurs only when necessary.

Reference: APA reference to the actual paper

Walsh, B., & Farrell, R. (2008). A Proactive Maintenance Scheme for Wireless Systems. .

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/18/0.md

Question

How do serverless architectures affect the deployment, monitoring, and maintenance lifecycle compared to traditional infrastructure?

Summary

These studies suggest that serverless architectures improve deployment efficiency, reduce maintenance burdens, and enhance scalability and cost-effectiveness compared to traditional infrastructure, while also simplifying monitoring through built-in features.

Concensus Link

Related Searches

- What are the benefits of serverless architectures in deployment?
- Challenges in monitoring serverless applications
- Serverless computing vs traditional infrastructure maintenance

---

C:/Users/user/Desktop/docs/ug/thesis/answers/q/18/1.md

Title

Serverless Architectures and Their Influence on Web Development

Summary

Serverless computing eliminates the need for server management, promoting a more efficient deployment model and reducing costs and simplifying scalability challenges in web development.

Reference: APA reference to the actual paper

Lingolu, M., & Dobbala, M. (2024). Serverless Architectures and Their Influence on Web Development. Journal of Artificial Intelligence & Cloud Computing. https://doi.org/10.47363/jaicc/2024(3)297.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/18/10.md

Title

Performance Evaluation and Comparison of Microservices and Serverless Deployments in Cloud

Summary

Serverless architectures perform better in terms of performance and cost, while microservices excel in memory use for cloud applications.

Reference: APA reference to the actual paper

Shrestha, R., & Nisha, B. (2023). Performance Evaluation and Comparison of Microservices and Serverless Deployments in Cloud. 2023 IEEE 8th International Conference on Smart Cloud (SmartCloud), 202-207. https://doi.org/10.1109/SmartCloud58862.2023.00043.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/18/2.md

Title

Serverless Deployment Methodologies: Smooth Transitions and Improved Reliability

Summary

Serverless architectures allow developers to create and launch applications without the burden of server management, leading to improved efficiency, dependability, and reduced downtime.

Reference: APA reference to the actual paper

Tripathi, A. (2022). Serverless Deployment Methodologies: Smooth Transitions and Improved Reliability. International Journal of Innovative Research in Advanced Engineering. https://doi.org/10.26562/ijirae.2022.v0912.10.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/18/3.md

Title

Unleashing the Power of Serverless Architectures in Cloud Technology: A Comprehensive Analysis and Future Trends

Summary

Serverless architectures result in 25% reduction in infrastructure costs, 30% increase in scalability, and 15% reduction in time-to-market for new applications compared to traditional cloud architectures.

Reference: APA reference to the actual paper

Tripathi, A. (2024). Unleashing the Power of Serverless Architectures in Cloud Technology: A Comprehensive Analysis and Future Trends. International Journal of Innovative Research in Advanced Engineering. https://doi.org/10.26562/ijirae.2024.v1103.01.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/18/4.md

Title

Serverless computing: economic and architectural impact

Summary

Serverless computing, allowing users to deploy individual functions on cloud platforms, has reduced hosting costs by 66%-95% and may influence common software architecture design practices.

Reference: APA reference to the actual paper

Adzic, G., & Chatley, R. (2017). Serverless computing: economic and architectural impact. Proceedings of the 2017 11th Joint Meeting on Foundations of Software Engineering. https://doi.org/10.1145/3106237.3117767.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/18/5.md

Title

Intelligent Framework in a Serverless Computing for Serving using Artificial Intelligence and Machine Learning

Summary

Serverless architectures offer developers scalability, flexibility, and cost savings, allowing them to focus on model development rather than infrastructure issues.

Reference: APA reference to the actual paper

Khatri, D., Khatri, S., & Mishra, D. (2024). Intelligent Framework in a Serverless Computing for Serving using Artificial Intelligence and Machine Learning. International Journal of Advanced Computer Science and Applications. https://doi.org/10.14569/ijacsa.2024.0150504.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/18/6.md

Title

Serverless Computing: State-of-the-Art, Challenges and Opportunities

Summary

Serverless computing offers lightweight, simple management, and is expected to dominate future cloud platforms.

Reference: APA reference to the actual paper

Li, Y., Lin, Y., Wang, Y., Ye, K., & Xu, C. (2023). Serverless Computing: State-of-the-Art, Challenges and Opportunities. IEEE Transactions on Services Computing, 16, 1522-1539. https://doi.org/10.1109/TSC.2022.3166553.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/18/7.md

Title

When Serverless Computing Meets Edge Computing: Architecture, Challenges, and Open Issues

Summary

Serverless edge computing offers benefits and manages challenges associated with edge infrastructure, but requires a comprehensive network architecture and communication process.

Reference: APA reference to the actual paper

Xie, R., Tang, Q., Qiao, S., Zhu, H., Yu, F., & Huang, T. (2021). When Serverless Computing Meets Edge Computing: Architecture, Challenges, and Open Issues. IEEE Wireless Communications, 28, 126-133. https://doi.org/10.1109/mwc.001.2000466.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/18/8.md

Title

An Evaluation of Open Source Serverless Computing Frameworks

Summary

Open source serverless frameworks like Fission, Kubeless, and OpenFaaS show promise for on-premise deployments, offering low operational concerns and efficient resource management.

Reference: APA reference to the actual paper

Mohanty, S., Premsankar, G., & Francesco, M. (2018). An Evaluation of Open Source Serverless Computing Frameworks. 2018 IEEE International Conference on Cloud Computing Technology and Science (CloudCom), 115-120. https://doi.org/10.1109/CloudCom2018.2018.00033.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/18/9.md

Title

Serverless Through Cloud Native Architecture

Summary

Serverless computing offers faster delivery, lower maintenance costs, and a more scalable approach for cloud applications, benefiting both enterprises and consumers.

Reference: APA reference to the actual paper

Venugopal, M., & Reddy, C. (2021). Serverless Through Cloud Native Architecture. .

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/19/0.md

Question

What are the cost implications of automating deployment, monitoring, and maintenance processes in large-scale systems?

Summary

These studies suggest that automating deployment, monitoring, and maintenance processes in large-scale systems can lead to significant cost savings, improved scalability, and enhanced resource efficiency, although initial investments and adaptation to specific environments may pose challenges.

Concensus Link

Related Searches

- Cost-benefit analysis of automation in IT systems
- How does automation impact operational efficiency?
- Strategies for reducing maintenance costs in large systems

C:/Users/user/Desktop/docs/ug/thesis/answers/q/19/1.md

Title

Optimizing Sensor Deployment and Maintenance Costs for Large-Scale Environmental Monitoring

Summary

Optimizing sensor deployment and maintenance costs can save up to 40% of maintenance cost compared to existing greedy heuristics in large-scale environmental monitoring.

Reference: APA reference to the actual paper

Yu, X., Ergun, K., Cherkasova, L., & Rosing, T. (2020). Optimizing Sensor Deployment and Maintenance Costs for Large-Scale Environmental Monitoring. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 39, 3918-3930. https://doi.org/10.1109/TCAD.2020.3012232.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/19/10.md

Title

Software system deployment process: A systematic mapping study

Summary

A holistic software system deployment process is needed to guide SMEs through phases, activities, tasks, templates, and roles, reducing time and costs in software system deployment.

Reference: APA reference to the actual paper

Panizzi, M., Genero, M., & Bertone, R. (2020). Software system deployment process: A systematic mapping study. , 138-151.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/19/2.md

Title

IoT Based Solar System Parameter Measurements

Summary

IoT-based remote monitoring of solar plants can facilitate preventive maintenance and fault detection, making it cost-effective for large-scale systems.

Reference: APA reference to the actual paper

Patil, G., Salgar, P., Sasane, P., & Sawant, P. (2023). IoT Based Solar System Parameter Measurements. International Journal of Advanced Research in Science, Communication and Technology. https://doi.org/10.48175/ijarsct-12008.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/19/3.md

Title

Automating Deployment and Scaling of ERP Applications Using Linux Containers and Kubernetes

Summary

Automating ERP application deployment and scaling using Linux containers and Kubernetes results in significant improvements in deployment time, scalability, and cost savings.

Reference: APA reference to the actual paper

Nirek, R. (2023). Automating Deployment and Scaling of ERP Applications Using Linux Containers and Kubernetes. Journal of Artificial Intelligence & Cloud Computing. https://doi.org/10.47363/jaicc/2023(2)e168.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/19/4.md

Title

A Low-Cost Information Monitoring System for Smart Farming Applications

Summary

The proposed low-cost, low-power, and low data-rate solution effectively monitors soil properties in large-scale agricultural farms, improving efficiency and reducing costs.

Reference: APA reference to the actual paper

Saqib, M., Almohamad, T., & Mehmood, R. (2020). A Low-Cost Information Monitoring System for Smart Farming Applications. Sensors (Basel, Switzerland), 20. https://doi.org/10.3390/s20082367.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/19/5.md

Title

Simplifying Installation and Maintenance of Ambient Intelligent Solutions Toward Large Scale Deployment

Summary

Our approach simplifies Ambient Intelligence solutions' deployment and maintenance, enabling large-scale deployment and maximizing their use/benefit.

Reference: APA reference to the actual paper

Aloulou, H., Abdulrazak, B., Endelin, R., Bentes, J., Tiberghien, T., & Bellmunt, J. (2016). Simplifying Installation and Maintenance of Ambient Intelligent Solutions Toward Large Scale Deployment. , 121-132. https://doi.org/10.1007/978-3-319-39601-9_11.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/19/6.md

Title

Integrating industrial maintenance strategy into ERP

Summary

Integrating maintenance strategies into ERP systems can improve production planning, scheduling, and analysis of maintenance history, resulting in cost savings and future projections.

Reference: APA reference to the actual paper

Nikolopoulos, K., Metaxiotis, K., Lekatis, N., & Assimakopoulos, V. (2003). Integrating industrial maintenance strategy into ERP. Ind. Manag. Data Syst., 103, 184-191. https://doi.org/10.1108/02635570310465661.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/19/7.md

Title

Improving Software Robot Maintenance in Large-Scale Environments–is Center of Excellence a Solution?

Summary

A Center of Excellence (CoE) is a key success factor in improving software robot maintenance in large-scale environments, with adaptable monitoring tools and in-house or outsourced CoEs being key.

Reference: APA reference to the actual paper

Hartikainen, E., Hotti, V., & Tukiainen, M. (2022). Improving Software Robot Maintenance in Large-Scale Environments–is Center of Excellence a Solution?. IEEE Access, 10, 96760-96773. https://doi.org/10.1109/ACCESS.2022.3205420.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/19/8.md

Title

The non-expert tax: quantifying the cost of auto-scaling in cloud-based data stream analytics

Summary

Auto-scaling in cloud-based data stream analytics services can lead to a Non-Expert Tax, with potential costs as high as 544% for short-term jobs and 332% per month for periodic workloads.

Reference: APA reference to the actual paper

Wang, Y., Lyu, B., & Kalavri, V. (2022). The non-expert tax: quantifying the cost of auto-scaling in cloud-based data stream analytics. Proceedings of the International Workshop on Big Data in Emergent Distributed Environments. https://doi.org/10.1145/3530050.3532925.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/19/9.md

Title

Low-cost internet of things (IoT) for monitoring and optimising mining small-scale trucks and surface mining shovels

Summary

Low-cost IoT-based Fleet Information System (FIS) can optimize mining small-scale trucks and surface mining shovels in medium-scale open pit mines, reducing loading time, optimizing routes, and improving safety without increasing mining costs.

Reference: APA reference to the actual paper

Aguirre-Jofré, H., Eyre, M., Valerio, S., & Vogt, D. (2021). Low-cost internet of things (IoT) for monitoring and optimising mining small-scale trucks and surface mining shovels. Automation in Construction, 131, 103918. https://doi.org/10.1016/J.AUTCON.2021.103918.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/2/0.md

Question

What are the most effective practices for implementing zero-downtime deployment strategies in cloud-native applications?

Summary

These studies suggest that the most effective practices for implementing zero-downtime deployment strategies in cloud-native applications include using Blue-Green, Canary, and Rolling deployment techniques,

leveraging microservices architecture with containerization and orchestration technologies, and employing continuous integration and deployment pipelines with tools like Kubernetes, Istio, and Jenkins.

Related Searches

1

- Best practices for zero-downtime deployment in cloud-native apps
- What are the benefits of canary deployments in Kubernetes?
- Techniques for achieving high availability in cloud applications

---

C:/Users/user/Desktop/docs/ug/thesis/answers/q/2/1.md

Title

Evaluate Solutions for Achieving High Availability or Near Zero Downtime for Cloud Native Enterprise Applications

Summary

Incorporating a cloud native template architecture and evaluating techniques for automatic database failover can help enterprises achieve near zero downtime for cloud-native applications.

Reference: APA reference to the actual paper

Malhotra, A., Elsayed, A., Torres, R., & Venkatraman, S. (2023). Evaluate Solutions for Achieving High Availability or Near Zero Downtime for Cloud Native Enterprise Applications. IEEE Access, 11, 85384-85394. https://doi.org/10.1109/ACCESS.2023.3303430.

Concensus Link

Method

Model development and evaluation.

Outcome

Application availability, database failover effectiveness.

C:/Users/user/Desktop/docs/ug/thesis/answers/q/2/10.md

Title

Low Latency Deployment of Service-based Data-intensive Applications in Cloud-Edge Environment

Summary

Our proposed method effectively optimizes data placement and service deployment in cloud-edge environments, ensuring low latency for data-intensive applications.

Reference: APA reference to the actual paper

Jia, J., & Wang, P. (2022). Low Latency Deployment of Service-based Data-intensive Applications in Cloud-Edge Environment. 2022 IEEE International Conference on Web Services (ICWS), 57-66. https://doi.org/10.1109/ICWS55610.2022.00023.

Concensus Link

Method

Model development and comparison

Outcome

Latency minimization.

Results

The proposed method reduced latency more effectively than existing algorithms.

C:/Users/user/Desktop/docs/ug/thesis/answers/q/2/2.md

Title

Evaluate Canary Deployment Techniques Using Kubernetes, Istio, and Liquibase for Cloud Native Enterprise Applications to Achieve Zero Downtime for Continuous Deployments

Summary

Canary deployments using Kubernetes, Istio, and Liquibase can achieve zero downtime for continuous deployments in cloud-native applications.

Reference: APA reference to the actual paper

Malhotra, A., Elsayed, A., Torres, R., & Venkatraman, S. (2024). Evaluate Canary Deployment Techniques Using Kubernetes, Istio, and Liquibase for Cloud Native Enterprise Applications to Achieve Zero Downtime for Continuous Deployments. IEEE Access, 12, 87883-87899. https://doi.org/10.1109/ACCESS.2024.3416087.

Concensus Link

Method

Qualitative assessment and technique proposal.

Outcome

Qualitative assessment of code deployment techniques.

Results

The paper presents a novel canary deployment technique for zero downtime using Istio and Liquibase.

C:/Users/user/Desktop/docs/ug/thesis/answers/q/2/3.md

Title

Comparison of zero downtime based deployment techniques in public cloud infrastructure

Summary

Blue Green (BG) deployment techniques, using DNS routing swap, Load Balancer swap, or newer image switch techniques, are suitable for zero-downtime deployment in cloud-native applications.

Reference: APA reference to the actual paper

Rudrabhatla, C. (2020). Comparison of zero downtime based deployment techniques in public cloud infrastructure. 2020 Fourth International Conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud) (I-SMAC), 1082-1086. https://doi.org/10.1109/I-SMAC49090.2020.9243605.

Concensus Link

Outcome

Deployment strategy effectiveness

C:/Users/user/Desktop/docs/ug/thesis/answers/q/2/4.md

Title

Survey and Evaluation of Blue-Green Deployment Techniques in Cloud Native Environments

Summary

Blue/Green deployment techniques aim to support zero maintenance windows and avoid interruption to end users in cloud-native applications.

Reference: APA reference to the actual paper

Yang, B., Sailer, A., & Mohindra, A. (2019). Survey and Evaluation of Blue-Green Deployment Techniques in Cloud Native Environments. , 69-81. https://doi.org/10.1007/978-3-030-45989-5_6.

Concensus Link

Method

Controlled experimental study

Outcome

Performance of Blue/Green deployment techniques.

Results

Blue/Green deployment supports zero maintenance windows for uninterrupted service.

C:/Users/user/Desktop/docs/ug/thesis/answers/q/2/5.md

Title

Implementation of a Continuous Integration and Deployment Pipeline for Containerized Applications in Amazon Web Services Using Jenkins, Ansible and Kubernetes

Summary

A continuous integration and deployment pipeline using Jenkins, Ansible, and Kubernetes ensures zero downtime and fast deployment of containerized applications in AWS.

Reference: APA reference to the actual paper

Cepuc, A., Botez, R., Crăciun, O., Ivanciu, I., & Dobrota, V. (2020). Implementation of a Continuous Integration and Deployment Pipeline for Containerized Applications in Amazon Web Services Using Jenkins, Ansible and Kubernetes. 2020 19th RoEduNet Conference: Networking in Education and Research (RoEduNet), 1-6. https://doi.org/10.1109/RoEduNet51892.2020.9324857.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/2/6.md

Title

Continuous Integration, Delivery and Deployment: A Systematic Review on Approaches, Tools, Challenges and Practices

Summary

Continuous practices in software development can reduce build and test time, increase visibility, and address security and scalability issues, but future research is needed to address contextual information, system architecture, and secure deployment pipelines.

Reference: APA reference to the actual paper

Shahin, M., Babar, M., & Zhu, L. (2017). Continuous Integration, Delivery and Deployment: A Systematic Review on Approaches, Tools, Challenges and Practices. IEEE Access, 5, 3909-3943. https://doi.org/10.1109/ACCESS.2017.2685629.

Concensus Link

Method

Systematic Review

Outcome

Approaches and tools for continuous software development practices.

Results

Identified 30 approaches and tools to improve continuous integration and deployment practices.

C:/Users/user/Desktop/docs/ug/thesis/answers/q/2/7.md

Title

Self-managing cloud-native applications: Design, implementation, and experience

Summary

This paper proposes a novel architecture for scalable and resilient self-managing cloud-native applications, addressing limitations of external management services and vendor lock-in.

Reference: APA reference to the actual paper

Carughi, G., Brunner, S., Blöchlinger, M., Spillner, J., & Bohnert, T. (2017). Self-managing cloud-native applications: Design, implementation, and experience. Future Gener. Comput. Syst., 72, 165-179. https://doi.org/10.1016/j.future.2016.09.002.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/2/8.md

Title

Mitigating the Risk of Cloud Services Downtime Using Live Migration and High Availability-Aware Placement

Summary

Live migration and high availability-aware placement are effective strategies for maintaining zero-downtime deployment in cloud-native applications.

Reference: APA reference to the actual paper

Li, J., Woodside, C., Chinneck, J., & Litoiu, M. (2017). Adaptive Cloud Deployment Using Persistence Strategies and Application Awareness. IEEE Transactions on Cloud Computing, 5, 277-290. https://doi.org/10.1109/TCC.2015.2409873.

Concensus Link

Method

Model development and comparison

Outcome

Migration downtime

Results

The proposed model minimizes migration downtime for virtual machines.

C:/Users/user/Desktop/docs/ug/thesis/answers/q/2/9.md

Title

Adaptive Cloud Deployment Using Persistence Strategies and Application Awareness

Summary

This paper enhances CloudOpt with adjustable persistence techniques, reducing reconfiguration effort by 90% with a 5-10% penalty in running costs, without reducing scalability.

Reference: APA reference to the actual paper

Li, J., Woodside, C., Chinneck, J., & Litoiu, M. (2017). Adaptive Cloud Deployment Using Persistence Strategies and Application Awareness. IEEE Transactions on Cloud Computing, 5, 277-290. https://doi.org/10.1109/TCC.2015.2409873.

Concensus Link

Method

Model development and comparison

Outcome

Reconfiguration effort, running costs.

Results

Persistence techniques reduced reconfiguration effort by 90% with a 5-10% cost penalty.

C:/Users/user/Desktop/docs/ug/thesis/answers/q/20/0.md

Question

How can a unified platform for deployment, monitoring, and maintenance improve operational efficiency?

Summary

These studies suggest that a unified platform for deployment, monitoring, and maintenance can improve operational efficiency by centralizing processes, reducing costs and workload, enhancing collaboration and communication, and enabling real-time monitoring and intelligent decision-making.

Concensus Link

Related Searches

- What are the benefits of a unified operational platform?
- Integration of monitoring and maintenance in operational systems
- Cloud computing's role in improving deployment efficiency

C:/Users/user/Desktop/docs/ug/thesis/answers/q/20/1.md

Title

A New ICT Architecture of Smart Water Network Platform for Improving Management Performance: Maintenance, Security, and Deployment Cost

Summary

A centralized architecture with a single version monitoring platform improves information efficiency by reducing maintenance costs, updating costs, and deployment costs.

Reference: APA reference to the actual paper

Li, C., Chou, H., Wu, C., & Tseng, P. (2024). A New ICT Architecture of Smart Water Network Platform for Improving Management Performance: Maintenance, Security, and Deployment Cost. 2024 10th International Conference on Applied System Innovation (ICASI), 157-159. https://doi.org/10.1109/ICASI60819.2024.10547855.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/20/10.md

Title

From service configuration through performance monitoring to fault detection: implementing an integrated and automated network maintenance platform for enhancing wide area transaction access services

Summary

An integrated and automated network maintenance platform can efficiently configure services, monitor performance, and detect network faults in Wide Area Transaction Access Services.

Reference: APA reference to the actual paper

Papavassiliou, S., & Pace, M. (2000). From service configuration through performance monitoring to fault detection: implementing an integrated and automated network maintenance platform for enhancing wide area transaction access services. Int. J. Netw. Manag., 10, 241-259. https://doi.org/10.1002/1099-1190(200009/10)10:5%3C241::AID-NEM374%3E3.0.CO;2-4.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/20/2.md

Title

An Experiment to Design an Operation and Maintenance System Integrating Apriori Association Rules for a Telecom Platform

Summary

The proposed operation and maintenance system integrating Apriori association rules significantly improves operational efficiency and intelligent level of the telecom platform's system and business.

Reference: APA reference to the actual paper

Li, C., Liu, L., Zhao, J., & Liu, Y. (2021). An Experiment to Design an Operation and Maintenance System Integrating Apriori Association Rules for a Telecom Platform. Wireless Communications and Mobile Computing. https://doi.org/10.1155/2021/1185584.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/20/3.md

Title

Assessing the transformative impact of cloud computing on software deployment and management

Summary

Cloud computing transforms software deployment and management by providing integrated management tools that streamline deployment, monitoring, and maintenance, reducing IT team burden and minimizing downtime.

Reference: APA reference to the actual paper

Segun-Falade, O., Osundare, O., Kedi, W., Okeleke, P., Ijomah, T., & Abdul-Azeez, O. (2024). Assessing the transformative impact of cloud computing on software deployment and management. Computer Science & IT Research Journal. https://doi.org/10.51594/csitrj.v5i8.1492.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/20/4.md

Title

Design and implementation of airport vehicle intelligent management and control platform based on 3S

Summary

A unified platform using 3S technology improves operational efficiency and maintains airport ground safety.

Reference: APA reference to the actual paper

Cheng, X., Chen, Z., Sun, E., Shan, Z., Zang, D., & Li, X. (2019). Design and implementation of airport vehicle intelligent management and control platform based on 3S. IOP Conference Series: Earth and Environmental Science, 330. https://doi.org/10.1088/1755-1315/330/5/052040.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/20/5.md

Title

Unified modeling of O&M services based on generalized measurement and horizontal correlation

Summary

This paper proposes a unified modeling method for O&M services, based on generalized measurement and horizontal correlation, to improve efficiency and reduce workload in substation operations and maintenance.

Reference: APA reference to the actual paper

Bo, C., Peng, L., Xiaobin, G., Aidong, X., Haomin, C., Wei, X., & Shuxiong, Z. (2014). Unified modeling of O&M services based on generalized measurement and horizontal correlation. 2014 China International Conference on Electricity Distribution (CICED), 1270-1272. https://doi.org/10.1109/CICED.2014.6991911.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/20/6.md

Title

Integrating Fleet Management: Streamlining Vehicle Monitoring and Maintenance Processes

Summary

An integrated fleet management system combining fault code diagnostics, vehicle tracking, and vendor lookup can streamline vehicle monitoring and maintenance decision-making.

Reference: APA reference to the actual paper

Nyati, S. (2023). Integrating Fleet Management: Streamlining Vehicle Monitoring and Maintenance Processes. Journal of Engineering and Applied Sciences Technology. https://doi.org/10.47363/jeast/2023(5)211.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/20/7.md

Title

Design of Integrated Operation and Maintenance Platform Based on AIOps

Summary

The integrated operation and maintenance platform based on AIOps realizes automation and intelligent operation in complex business scenarios, improving efficiency and monitoring.

Reference: APA reference to the actual paper

Fan, Y., Xu, K., Wu, D., Yang, F., Zeng, Y., Tang, Z., Li, J., & Wang, X. (2020). Design of Integrated Operation and Maintenance Platform Based on AIOps. Advances in 3D Image and Graphics Representation, Analysis, Computing and Information Technology. https://doi.org/10.1007/978-981-15-3867-4_51.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/20/8.md

Title

Efficiency Analysis of an Interoperable Healthcare Operations Platform

Summary

The new interoperable healthcare operations platform significantly improves efficiency and satisfaction compared to legacy systems, reducing document retrieval times by 1 minute and 1 second.

Reference: APA reference to the actual paper

Osborne, T., Clark, R., Blackowiak, J., Williamson, P., Werb, S., & Strong, B. (2017). Efficiency Analysis of an Interoperable Healthcare Operations Platform. Journal of Medical Systems, 41, 1-7. https://doi.org/10.1007/s10916-017-0706-7.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/20/9.md

Title

Design and Implementation of an Edge Container Management Platform based on Artificial Intelligence

Summary

The edge container management platform, which supports AI operation and maintenance, provides a better solution for deployment and maintenance of IoT applications.

Reference: APA reference to the actual paper

Gao, Q., Wu, Y., & Hao, Y. (2022). Design and Implementation of an Edge Container Management Platform based on Artificial Intelligence. Proceedings of the 2022 10th International Conference on Information Technology: IoT and Smart City. https://doi.org/10.1145/3582197.3582240.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/3/0.md

Question

How does the use of containerization (e.g., Docker) impact the reliability and efficiency of deployment processes?

Summary

These studies suggest that optimizing deployment pipelines to reduce deployment time and errors can be achieved through automation with CI/CD pipelines, parallelization of build processes, dependency caching, incremental builds, and machine learning for predictive resource allocation.

Related Searches

- What are best practices for optimizing CI/CD pipelines?
- Machine learning applications in CI/CD efficiency
- Benefits of automation in deployment processes

C:/Users/user/Desktop/docs/ug/thesis/answers/q/3/1.md

Title

The Impact of an Automation System Built with Jenkins on the Efficiency of Container-Based System Deployment

Summary

Automated deployment using Jenkins significantly reduces deployment time and error rate compared to manual deployment.

Reference: APA reference to the actual paper

Hyun, G., Oak, J., Kim, D., & Kim, K. (2024). The Impact of an Automation System Built with Jenkins on the Efficiency of Container-Based System Deployment. Sensors (Basel, Switzerland), 24. https://doi.org/10.3390/s24186002.

Concensus Link

Method

Controlled experimental study

Outcome

Deployment time, error rate

Results

Automated deployment reduced deployment time and error rate compared to manual deployment.

C:/Users/user/Desktop/docs/ug/thesis/answers/q/3/10.md

Title

Deploying Jenkins, Ansible and Kubernetes to Automate Continuous Integration and Continuous Deployment Pipeline

Summary

Deploying Jenkins, Ansible, and Kubernetes clusters can automate continuous integration, continuous testing, and continuous delivery pipelines, reducing deployment time and errors.

Reference: APA reference to the actual paper

Singh, N., Singh, A., & Rawat, V. (2022). Deploying Jenkins, Ansible and Kubernetes to Automate Continuous Integration and Continuous Deployment Pipeline. 2022 IEEE International Conference on Service Operations and Logistics, and Informatics (SOLI), 1-5. https://doi.org/10.1109/SOLI57430.2022.10294378.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/3/2.md

Title

Continuous Integration and Continuous Deployment (CI/CD) Optimization

Summary

Optimizing CI/CD processes can be achieved through parallelization of build processes, dependency caching, incremental builds, and advanced rollback mechanisms like blue-green deployments and canary releases.

Reference: APA reference to the actual paper

Gujar, S., & Patil, S. (2024). Continuous Integration and Continuous Deployment (CI/CD) Optimization. International Journal of Innovative Science and Research Technology (IJISRT). https://doi.org/10.38124/ijisrt/ijisrt24oct014.

Concensus Link

Outcome

Deployment times, system reliability.

Results

Optimizing CI/CD pipelines reduces deployment times and maintains system reliability.

C:/Users/user/Desktop/docs/ug/thesis/answers/q/3/3.md

Title

Method for Continuous Integration and Deployment Using a Pipeline Generator for Agile Software Projects

Summary

Pipelining techniques in continuous integration and continuous delivery can improve delivery timelines, test load steps, and benchmarking tasks, reducing system interruption and increasing productivity.

Reference: APA reference to the actual paper

Donca, I., Stan, O., Misaros, M., Goța, D., & Miclea, L. (2022). Method for Continuous Integration and Deployment Using a Pipeline Generator for Agile Software Projects. Sensors (Basel, Switzerland), 22. https://doi.org/10.3390/s22124637.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/3/4.md

Title

Implementing CI / CD Pipelines for Enhanced Efficiency in IT Projects

Summary

CI/CD pipelines significantly reduce deployment failures, improve error detection, facilitate faster release cycles, and enhance team collaboration and productivity.

Reference: APA reference to the actual paper

Emmanni, P. (2020). Implementing CI / CD Pipelines for Enhanced Efficiency in IT Projects. International Journal of Science and Research (IJSR). https://doi.org/10.21275/sr24402001528.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/3/5.md

Title

OPTIMIZING CI/CD WORKFLOWS WITH MACHINE LEARNING: PREDICTIVE RESOURCE ALLOCATION FOR ENHANCED DEPLOYMENT EFFICIENCY

Summary

Predictive resource allocation using machine learning can optimize deployment time and reduce resource wastage by predicting future needs, minimizing redeployment issues and time.

Reference: APA reference to the actual paper

Mallreddy, S. (2022). OPTIMIZING CI/CD WORKFLOWS WITH MACHINE LEARNING: PREDICTIVE RESOURCE ALLOCATION FOR ENHANCED DEPLOYMENT EFFICIENCY. IJRDO -Journal of Computer Science Engineering. https://doi.org/10.53555/cse.v8i7.6130.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/3/6.md

Title

Continuous Integration, Delivery and Deployment: A Systematic Review on Approaches, Tools, Challenges and Practices

Pointer: Points to Local Extracted Version

q/2/6.md

C:/Users/user/Desktop/docs/ug/thesis/answers/q/3/7.md

Title

Data Management for ML-Based Analytics and Beyond

Summary

Optimizing ML pipelines can be achieved by managing high-quality training data, monitoring ML errors at deployment time, and connecting end use to deployment algorithms.

Reference: APA reference to the actual paper

Kang, D., Guibas, J., Bailis, P., Hashimoto, T., Sun, Y., & Zaharia, M. (2024). Data Management for ML-Based Analytics and Beyond. ACM / IMS Journal of Data Science. https://doi.org/10.1145/3611093.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/3/8.md

Title

Method for Continuous Integration and Deployment Using a Pipeline Generator for Agile Software Projects

Summary

Pipelining techniques, such as continuous integration and continuous delivery, can improve deployment timelines, test load steps, and benchmarking tasks, reducing system interruption and errors.

Reference: APA reference to the actual paper

Muppa, N. (2023). Method for Continuous Integration and Deployment Using a Pipeline Generator for Agile Software Projects. Journal of Engineering and Applied Sciences Technology. https://doi.org/10.47363/jeast/2023(5)256.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/3/9.md

Title

Measuring the Benefits of CI/CD Practices for Database Application Development

Summary

Introducing CI/CD pipelines reduces failed deployments, improves stability, and increases the number of executed deployments in database development projects.

Reference: APA reference to the actual paper

Fluri, J., Fornari, F., & Pustulka, E. (2023). Measuring the Benefits of CI/CD Practices for Database Application Development. 2023 IEEE/ACM International Conference on Software and System Processes (ICSSP), 46-57. https://doi.org/10.1109/ICSSP59042.2023.00015.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/4/0.md

Question

How can infrastructure as code (IaC) tools (e.g., Terraform, Ansible) streamline the setup and teardown of deployment environments?

Summary

These studies suggest that Infrastructure as Code (IaC) tools like Terraform and Ansible streamline the setup and teardown of deployment environments by automating provisioning and configuration, reducing human intervention and errors, improving efficiency, and ensuring consistency across environments.

Related Searches

- Benefits of using Infrastructure as Code tools?
- Can Infrastructure as Code improve deployment efficiency?
- Challenges in implementing IaC in cloud environments?

C:/Users/user/Desktop/docs/ug/thesis/answers/q/4/1.md

Title

Automating Infrastructure Management: Benefits and Challenges of Ansible and Terraform Implementation Across Sectors

Summary

Infrastructure as code tools like Ansible and Terraform enable more efficient, scalable, and repeatable infrastructure deployments, reducing operational costs, improving resource utilization, and enhancing disaster recovery capabilities.

Reference: APA reference to the actual paper

Pathak, A. (2024). Automating Infrastructure Management: Benefits and Challenges of Ansible and Terraform Implementation Across Sectors. International Journal of Scientific Research in Computer Science, Engineering and Information Technology. https://doi.org/10.32628/cseit241051032.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/4/2.md

Title

Analysis of Software Tools for Automation of Configuration and Management Functions in It Infrastructures

Summary

There is currently no single clearly distinguished universal software tool that fully satisfies the entire spectrum of requirements and needs for the setup and teardown of deployment environments using infrastructure as code tools like Terraform and Ansible.

Reference: APA reference to the actual paper

Orlov, M., & Dmytriv, Y. (2024). Analysis of Software Tools for Automation of Configuration and Management Functions in It Infrastructures. Vìsnik Nacìonal'nogo unìversitetu "L'vìvs'ka polìtehnìka". Serìâ Ìnformacìjnì sistemi ta merežì. https://doi.org/10.23939/sisn2024.15.370.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/4/3.md

Title

Terraform: Streamlining Infrastructure Deployment and Management Through Infrastructure as Code

Summary

Terraform significantly reduces the time and effort required for deployment, as well as the amount of human interaction required and the associated errors.

Reference: APA reference to the actual paper

Mehdi, A., & Walia, R. (2023). Terraform: Streamlining Infrastructure Deployment and Management Through Infrastructure as Code. 2023 International Conference on Computing, Communication, and Intelligent Systems (ICCCIS), 851-856. https://doi.org/10.1109/ICCCIS60361.2023.10425616.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/4/4.md

Title

Deploying Hadoop Architecture Using Ansible and Terraform

Summary

Ansible and Terraform automate the process of setting up Hadoop clusters with no human intervention, making them useful for managing Big Data in distributed environments.

Reference: APA reference to the actual paper

Gupta, M., Chowdary, M., Bussa, S., & Chowdary, C. (2021). Deploying Hadoop Architecture Using Ansible and Terraform. 2021 5th International Conference on Information Systems and Computer Networks (ISCON), 1-6. https://doi.org/10.1109/ISCON52037.2021.9702299.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/4/5.md

Title

Empowering DevOps with Infrastructure as Code :Trends, Tools and Techniques

Summary

IaC tools like Terraform and Ansible enable automated provisioning and maintenance, improving consistency, reliability, and traceability in deployment environments.

Reference: APA reference to the actual paper

Ranjan, S. (2024). Empowering DevOps with Infrastructure as Code :Trends, Tools and Techniques. INTERANTIONAL JOURNAL OF SCIENTIFIC RESEARCH IN ENGINEERING AND MANAGEMENT. https://doi.org/10.55041/ijsrem35407.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/4/6.md

Title

Fully Automated Testbed of Cisco Virtual Routers in Cloud Based Environments

Summary

Infrastructure as code tools like Terraform and Ansible reduce human intervention, repetitive workloads, and errors, leading to a fully automated solution for deploying virtual router infrastructure in cloud-based environments.

Reference: APA reference to the actual paper

Sicoe, A., Botez, R., Ivanciu, I., & Dobrota, V. (2022). Fully Automated Testbed of Cisco Virtual Routers in Cloud Based Environments. 2022 IEEE International Black Sea Conference on Communications and Networking (BlackSeaCom), 49-53. https://doi.org/10.1109/BlackSeaCom54372.2022.9858288.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/4/7.md

Title

Terraform - Automating Infrastructure as a Service

Summary

Terraform and Ansible allow for the automation of infrastructure provisioning and a strict development and review life cycle, similar to the application software development process.

Reference: APA reference to the actual paper

Krishnan, P. (2024). Terraform - Automating Infrastructure as a Service. International Journal of Science and Research (IJSR). https://doi.org/10.21275/sr24930224444.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/4/8.md

Title

High Level Cloud Architecture for Automated Deployment System Using Terraform

Summary

Terraform automates the provisioning and management of cloud resources, reducing manual intervention and human errors, and promoting infrastructure versioning for compliance with regulatory requirements.

Reference: APA reference to the actual paper

Sharma, S., Agarwal, P., & Tyagi, R. (2023). High Level Cloud Architecture for Automated Deployment System Using Terraform. 2023 Global Conference on Information Technologies and Communications (GCITC), 1-6. https://doi.org/10.1109/GCITC60406.2023.10425997.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/4/9.md

Title

On the Understandability of Design-Level Security Practices in Infrastructure-as-Code Scripts and Deployment Architectures

Summary

Semi-formal IaC deployment architecture models and metrics significantly improve the understandability of security practices in Infrastructure as Code without significantly increasing duration.

Reference: APA reference to the actual paper

Ntentos, E., Lueger, N., Simhandl, G., Zdun, U., Schneider, S., Scandariato, R., & Ferreyra, N. (2024). On the Understandability of Design-Level Security Practices in Infrastructure-as-Code Scripts and Deployment Architectures. ACM Transactions on Software Engineering and Methodology. https://doi.org/10.1145/3691630.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/5/0.md

Question

What is the impact of feature flags on the speed and reliability of software deployment?

Summary

These studies suggest that feature flags can enhance the speed of software deployment by enabling rapid development and dynamic feature management, but they may also introduce technical debt and reliability challenges due to complex interdependencies and maintenance issues.

Related Searches

- How do feature flags improve software deployment reliability?
- Feature flagging strategies in software development
- Benefits of using feature flags in deployment processes

C:/Users/user/Desktop/docs/ug/thesis/answers/q/5/1.md

Title

Discovering feature flag interdependencies in Microsoft office

Summary

Feature flag interdependencies can be discovered using probabilistic reasoning, aiding product teams in improving system reliability and reducing technical debt.

Reference: APA reference to the actual paper

Schröder, M., Kevic, K., Gopstein, D., Murphy, B., & Beckmann, J. (2022). Discovering feature flag interdependencies in Microsoft office. Proceedings of the 30th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering. https://doi.org/10.1145/3540250.3558942.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/5/10.md

Title

Capture the Feature Flag: Detecting Feature Flags in Open-Source

Summary

Our semi-automated mining approach detects feature flags in open-source projects, providing valuable data for software engineering research and identifying practices that reduce technical debt.

Reference: APA reference to the actual paper

Meinicke, J., Hoyos, J., Vasilescu, B., & Kästner, C. (2020). Capture the Feature Flag: Detecting Feature Flags in Open-Source. 2020 IEEE/ACM 17th International Conference on Mining Software Repositories (MSR), 169-173. https://doi.org/10.1145/3379597.3387463.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/5/2.md

Title

Piranha: Reducing Feature Flag Debt at Uber

Summary

PIRANHA, an automated code refactoring tool, reduces feature flag debt and increases maintenance complexity in Uber apps, with 75% of generated diffs processed within a week.

Reference: APA reference to the actual paper

Ramanathan, M., Clapp, L., Barik, R., & Sridharan, M. (2020). Piranha: Reducing Feature Flag Debt at Uber. 2020 IEEE/ACM 42nd International Conference on Software Engineering: Software Engineering in Practice (ICSE-SEIP), 221-230. https://doi.org/10.1145/3377813.3381350.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/5/3.md

Title

Cost-Efficient Deployment Strategies: A Comparative Analysis of Feature Flagging Services and Blue/Green Deployments

Summary

Feature flagging services provide a cost-effective, flexible solution for dynamic feature management, while Blue/Green deployments minimize deployment risks.

Reference: APA reference to the actual paper

Kumarasamy, S. (2024). Cost-Efficient Deployment Strategies: A Comparative Analysis of Feature Flagging Services and Blue/Green Deployments. Asian Journal of Research in Computer Science. https://doi.org/10.9734/ajrcos/2024/v17i6459.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/5/4.md

Title

Continuous Integration, Delivery and Deployment: A Systematic Review on Approaches, Tools, Challenges and Practices

Summary

Continuous practices in software development can reduce build and test time, increase visibility, and address security and scalability issues, but future research is needed to address contextual information, system architecture, and secure deployment pipelines.

Reference: APA reference to the actual paper

Shahin, M., Babar, M., & Zhu, L. (2017). Continuous Integration, Delivery and Deployment: A Systematic Review on Approaches, Tools, Challenges and Practices. IEEE Access, 5, 3909-3943. https://doi.org/10.1109/ACCESS.2017.2685629.

Concensus Link

Method

Systematic Review

Outcome

Approaches and tools for continuous software development practices.

Results

Identified 30 approaches and tools to improve continuous integration and deployment practices.

C:/Users/user/Desktop/docs/ug/thesis/answers/q/5/5.md

Title

FOCloud: Feature Model Guided Performance Prediction and Explanation for Deployment Configurable Cloud Applications

Summary

Feature-Oriented Cloud (FOCloud) effectively predicts and explains performance outcomes for deployment configurable cloud applications by using feature modeling, sampling, machine learning, and Explainable AI techniques.

Reference: APA reference to the actual paper

Kumara, I., Ariz, M., Chhetri, M., Mohammadi, M., Van Den Heuvel, W., & Tamburri, D. (2023). FOCloud: Feature Model Guided Performance Prediction and Explanation for Deployment Configurable Cloud Applications. IEEE Transactions on Services Computing, 16, 302-314. https://doi.org/10.1109/TSC.2022.3142853.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/5/6.md

Title

Exploring Differences and Commonalities between Feature Flags and Configuration Options

Summary

Feature flags and configuration options share similarities, but their applications, goals, and challenges differ significantly, offering opportunities for knowledge and technology transfer between both communities.

Reference: APA reference to the actual paper

Meinicke, J., Wong, C., Vasilescu, B., & Kästner, C. (2020). Exploring Differences and Commonalities between Feature Flags and Configuration Options. 2020 IEEE/ACM 42nd International Conference on Software Engineering: Software Engineering in Practice (ICSE-SEIP), 233-242. https://doi.org/10.1145/3377813.3381366.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/5/7.md

Title

On the Interaction of Feature Toggles

Summary

Feature toggles in software projects tend to interact with each other and other code expressions, increasing their complexity over time.

Reference: APA reference to the actual paper

Tërnava, X., Lesoil, L., Randrianaina, G., Khelladi, D., & Acher, M. (2022). On the Interaction of Feature Toggles. Proceedings of the 16th International Working Conference on Variability Modelling of Software-Intensive Systems. https://doi.org/10.1145/3510466.3510485.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/5/8.md

Title

Reliability-driven deployment optimization for embedded systems

Summary

This paper presents an automated approach for balancing software and hardware reliabilities in embedded systems, providing near-optimal deployment alternatives using an evolutionary algorithm.

Reference: APA reference to the actual paper

Meedeniya, I., Buhnova, B., Aleti, A., & Grunske, L. (2011). Reliability-driven deployment optimization for embedded systems. J. Syst. Softw., 84, 835-846. https://doi.org/10.1016/j.jss.2011.01.004.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/5/9.md

Title

Continuous Integration and Continuous Deployment (CI/CD) Optimization

Summary

Optimizing Continuous Integration and Continuous Deployment processes through parallelization, caching, and incremental builds can significantly reduce build times and improve system reliability.

Reference: APA reference to the actual paper

Gujar, S., & Patil, S. (2024). Continuous Integration and Continuous Deployment (CI/CD) Optimization. International Journal of Innovative Science and Research Technology (IJISRT). https://doi.org/10.38124/ijisrt/ijisrt24oct014.

Concensus Link

Outcome

Deployment times, system reliability.

Related Searches

Optimizing CI/CD pipelines reduces deployment times and maintains system reliability.

C:/Users/user/Desktop/docs/ug/thesis/answers/q/6/0.md

Question

How can AI and machine learning be applied to improve anomaly detection in real-time system monitoring?

Summary

These studies suggest that AI and machine learning can improve real-time anomaly detection in system monitoring by using hybrid models combining statistical and machine learning techniques, ensemble methods, deep learning architectures like LSTM, and multimodal data integration to enhance detection accuracy, reduce computational complexity, and facilitate autonomous operations.

Related Searches

- What are the best machine learning techniques for anomaly detection?
- AI applications in industrial real-time monitoring
- Enhancing real-time anomaly detection in network systems

C:/Users/user/Desktop/docs/ug/thesis/answers/q/6/1.md

Title

Hybrid Statistical-Machine Learning for Real-Time Anomaly Detection in Industrial Cyber–Physical Systems

Summary

The proposed hybrid statistical-machine learning model integrates a seasonal autoregressive integration moving average (SARIMA)-based dynamic threshold model and a long short-term memory (LSTM) model for real-time ICS network traffic anomaly detection with high detection accuracy and low computational complexity.

Reference: APA reference to the actual paper

Hao, W., Yang, T., & Yang, Q. (2021). Hybrid Statistical-Machine Learning for Real-Time Anomaly Detection in Industrial Cyber–Physical Systems. IEEE Transactions on Automation Science and Engineering, 20, 32-46. https://doi.org/10.1109/TASE.2021.3073396.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/6/10.md

Title

Effective and efficient network anomaly detection system using machine learning algorithm

Summary

Supervised machine learning algorithm AODE has a comparable accuracy of 97.26% and a processing time of approximately 7 seconds for network anomaly detection.

Reference: APA reference to the actual paper

Nawir, M., Amir, A., Yaakob, N., & Lynn, O. (2019). Effective and efficient network anomaly detection system using machine learning algorithm. Bulletin of Electrical Engineering and Informatics. https://doi.org/10.11591/EEI.V8I1.1387.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/6/2.md

Title

A Hybrid Machine-Learning Ensemble for Anomaly Detection in Real-Time Industry 4.0 Systems

Summary

A hybrid machine-learning ensemble using Local Outlier Factor, One-Class Support Vector Machine, and Autoencoder improves anomaly detection in real-time industrial systems.

Reference: APA reference to the actual paper

Velásquez, D., Perez, E., Oregui, X., Artetxe, A., Manteca, J., Escayola, J., Toro, M., Maiza, M., & Sierra, B. (2022). A Hybrid Machine-Learning Ensemble for Anomaly Detection in Real-Time Industry 4.0 Systems. IEEE Access, 10, 72024-72036. https://doi.org/10.1109/access.2022.3188102.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/6/3.md

Title

Detection and Analysis of Anomalous Behavior in On-Orbit Satellites Using AI Algorithms

Summary

AI algorithms, particularly machine learning and deep learning, can improve anomaly detection in on-orbit satellites by processing extensive telemetry data and identifying intricate patterns.

Reference: APA reference to the actual paper

Siddique, I. (2024). Detection and Analysis of Anomalous Behavior in On-Orbit Satellites Using AI Algorithms. Journal of Firewall Software and Networking. https://doi.org/10.48001/jofsn.2024.226-17.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/6/4.md

Title

Anomaly Detection from System Tracing Data Using Multimodal Deep Learning

Summary

Anomaly detection in system tracing data can be improved using multimodal deep learning methods, which outperform traditional methods.

Reference: APA reference to the actual paper

Nedelkoski, S., Cardoso, J., & Kao, O. (2019). Anomaly Detection from System Tracing Data Using Multimodal Deep Learning. 2019 IEEE 12th International Conference on Cloud Computing (CLOUD), 179-186. https://doi.org/10.1109/CLOUD.2019.00038.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/6/5.md

Title

Improving Monitoring of IT Systems using Machine Learning

Summary

Machine learning, specifically neural networks, can improve IT monitoring by enabling faster detection of deviations, better proactive maintenance, and more rapid root cause analysis.

Reference: APA reference to the actual paper

Með, B., Með, T., & Gagnnámi, V. (2017). Improving Monitoring of IT Systems using Machine Learning. .

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/6/6.md

Title

Real-Time Network Traffic Analysis and Anomaly Detection to Enhance Network Security and Performance: Machine Learning Approaches

Summary

Machine learning can improve real-time network traffic analysis and anomaly detection, enhancing network security and performance.

Reference: APA reference to the actual paper

Jakkani, A. (2024). Real-Time Network Traffic Analysis and Anomaly Detection to Enhance Network Security and Performance: Machine Learning Approaches. June-July 2024. https://doi.org/10.55529/jecnam.44.32.44.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/6/7.md

Title

Enhancing Anomaly Detection in Sensor Time Series Data using Machine Learning Model Optimization

Summary

Optimized architectures of Long Short-Term Memory (LSTM) networks improve anomaly detection performance and reduce computation time in sensor data for real-time system monitoring.

Reference: APA reference to the actual paper

R, B., & R, P. (2024). Enhancing Anomaly Detection in Sensor Time Series Data using Machine Learning Model Optimization. 2024 International Conference on Advancements in Power, Communication and Intelligent Systems (APCI), 1-6. https://doi.org/10.1109/APCI61480.2024.10616619.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/6/8.md

Title

AI-Driven Database Security: Proactive Detection, Response to SQL Injections, and Real-Time Anomaly Detection & Threat Mitigation with Machine Learning

Summary

Machine learning algorithms can improve database security by detecting SQL injections, anomaly response, and threat diminution, enhancing efficiency and addressing shortcomings.

Reference: APA reference to the actual paper

Jaini, S. (2021). AI-Driven Database Security: Proactive Detection, Response to SQL Injections, and Real-Time Anomaly Detection & Threat Mitigation with Machine Learning. International Journal for Research Publication and Seminar. https://doi.org/10.36676/jrps.v12.i3.1599.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/6/9.md

Title

Hybrid Machine Learning for Anomaly Detection in Industrial Time-Series Measurement Data

Summary

A parallel hybrid machine learning system using key performance indicators and LSTM-VAE variational autoencoders improves anomaly detection in safety-relevant applications.

Reference: APA reference to the actual paper

Terbuch, A., O'Leary, P., & Auer, P. (2022). Hybrid Machine Learning for Anomaly Detection in Industrial Time-Series Measurement Data. 2022 IEEE International Instrumentation and Measurement Technology Conference (I2MTC), 1-6. https://doi.org/10.1109/I2MTC48687.2022.9806663.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/7/0.md

Question

What are the challenges of implementing observability in microservices architectures, and how can they be addressed?

Summary

These studies suggest that the challenges of implementing observability in microservices architectures include complexity in distributed systems, tool-dependence, and high costs, which can be addressed through systematic methods, adaptive approaches, and event-based techniques.

Related Searches

- What are best practices for microservice observability?
- Challenges in monitoring distributed systems
- Techniques for improving observability in cloud-native applications

---

C:/Users/user/Desktop/docs/ug/thesis/answers/q/7/1.md

Title

A Survey on Observability of Distributed Edge & Container-Based Microservices

Summary

Observability in distributed edge and containerized microservices helps detect and troubleshoot outages in critical use cases like industrial automation processes.

Reference: APA reference to the actual paper

Usman, M., Ferlin, S., Brunstrom, A., & Taheri, J. (2022). A Survey on Observability of Distributed Edge & Container-Based Microservices. IEEE Access, 10, 86904-86919. https://doi.org/10.1109/ACCESS.2022.3193102.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/7/10.md

Title

Industry practices and challenges for the evolvability assurance of microservices

Summary

A balance between decentralization and standardization is crucial for evolvability assurance in microservices, with specialized tools and metrics needed for continuous evaluation of service granularity and dependencies.

Reference: APA reference to the actual paper

Bogner, J., Fritzsch, J., Wagner, S., & Zimmermann, A. (2021). Industry practices and challenges for the evolvability assurance of microservices. Empirical Software Engineering, 26. https://doi.org/10.1007/s10664-021-09999-9.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/7/2.md

Title

Adaptive Observability for Forensic-Ready Microservice Systems

Summary

Adaptive observability based on game theory improves forensic readiness of microservices, outperforming other observability approaches with improvements ranging from 3.1% up to 42.50%.

Reference: APA reference to the actual paper

Monteiro, D., Yu, Y., Zisman, A., & Nuseibeh, B. (2023). Adaptive Observability for Forensic-Ready Microservice Systems. IEEE Transactions on Services Computing, 16, 3196-3209. https://doi.org/10.1109/TSC.2023.3290474.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/7/3.md

Title

Informed and Assessable Observability Design Decisions in Cloud-Native Microservice Applications

Summary

Instrumenting and configuring observability in microservice applications is challenging, tool-dependent, and tied to costs, with architects often relying on professional intuition for design decisions.

Reference: APA reference to the actual paper

Borges, M., Bauer, J., Werner, S., Gebauer, M., & Tai, S. (2024). Informed and Assessable Observability Design Decisions in Cloud-Native Microservice Applications. 2024 IEEE 21st International Conference on Software Architecture (ICSA), 69-78. https://doi.org/10.1109/ICSA59870.2024.00015.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/7/4.md

Title

Offline Trace Generation for Microservice Observability

Offline approach to distributed tracing in microservice architectures allows for evaluation of observability in a less costly and implementation-agnostic manner.

Reference: APA reference to the actual paper

Ernst, D., & Tai, S. (2021). Offline Trace Generation for Microservice Observability. 2021 IEEE 25th International Enterprise Distributed Object Computing Workshop (EDOCW), 308-317. https://doi.org/10.1109/EDOCW52865.2021.00062.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/7/5.md

Title

The Kaiju project: enabling event-driven observability

Summary

An event-based approach enables understanding system behavior in near real-time more effectively than state-of-the-art solutions in microservices architectures.

Reference: APA reference to the actual paper

Scrocca, M., Tommasini, R., Margara, A., Della Valle, E., & Sakr, S. (2020). The Kaiju project: enabling event-driven observability. Proceedings of the 14th ACM International Conference on Distributed and Event-based Systems. https://doi.org/10.1145/3401025.3401740.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/7/6.md

Title

OXN - Automated Observability Assessments for Cloud-Native Applications

Summary

Instrumenting and configuring observability in microservice applications is challenging, tool-dependent, and tied to costs, with practitioners often relying on professional intuition for design decisions.

Reference: APA reference to the actual paper

Borges, M., Bauer, J., & Werner, S. (2024). OXN - Automated Observability Assessments for Cloud-Native Applications. 2024 IEEE 21st International Conference on Software Architecture Companion (ICSA-C), 167-170. https://doi.org/10.1109/ICSA-C63560.2024.00035.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/7/7.md

Title

On Observability and Monitoring of Distributed Systems: An Industry Interview Study

Summary

Observability in microservices architectures faces challenges in complexity, dynamics, and awareness from both management and developer perspectives, requiring an organizational concept with strategy, roles, and responsibilities.

Reference: APA reference to the actual paper

Niedermaier, S., Koetter, F., Freymann, A., & Wagner, S. (2019). On Observability and Monitoring of Distributed Systems: An Industry Interview Study. , 36-52. https://doi.org/10.1007/978-3-030-33702-5_3.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/7/8.md

Title

MiSeRTrace: Kernel-level Request Tracing for Microservice Visibility

Summary

MiSeRTrace enables observability in microservice applications by tracing end-to-end paths of requests at the kernel space without instrumentation or modification of the application.

Reference: APA reference to the actual paper

, T., Dixit, V., S., N., Gowda, V., Vasudevan, S., & Kalambur, S. (2022). MiSeRTrace: Kernel-level Request Tracing for Microservice Visibility. Companion of the 2022 ACM/SPEC International Conference on Performance Engineering. https://doi.org/10.1145/3491204.3527462.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/7/9.md

Title

Distributed tracing in microservice architecture

Summary

Observability in microservices architectures is a main challenge, and the KumuluzEE OpenTracing extension helps instrument JAX-RS microservices with distributed tracing.

Reference: APA reference to the actual paper

Jerič, D. (2019). Distributed tracing in microservice architecture. .

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/8/0.md

Question

How effective are open-source tools (e.g., Prometheus, Grafana) compared to proprietary solutions in system monitoring?

Summary

These studies suggest that open-source tools like Prometheus and Grafana are effective for real-time monitoring, data visualization, and alerting in various environments, offering advantages such as flexibility, scalability, and integration capabilities, comparable to proprietary solutions.

Related Searches

- What are the advantages of open-source monitoring tools?
- Comparison of open-source vs proprietary monitoring solutions
- Best practices for implementing Prometheus and Grafana

C:/Users/user/Desktop/docs/ug/thesis/answers/q/8/1.md

Title

ВИКОРИСТАННЯ ВІДДАЛЕНОГО МОНІТОРИНГУ ДЛЯ ПІДВИЩЕННЯ ЯКОСТІ ТА ЕФЕКТИВНОСТІ У ВИРОБНИЧОМУ СЕРЕДОВИЩІ

Summary

Prometheus and Grafana provide real-time monitoring and data visualization capabilities, enhancing understanding of networks and servers, and allowing network administrators to gain full control over their status and resource utilization.

Reference: APA reference to the actual paper

Юхимчук, М., Стрембіцький, П., & Перепелиця, С. (2024). ВИКОРИСТАННЯ ВІДДАЛЕНОГО МОНІТОРИНГУ ДЛЯ ПІДВИЩЕННЯ ЯКОСТІ ТА ЕФЕКТИВНОСТІ У ВИРОБНИЧОМУ СЕРЕДОВИЩІ. Herald of Khmelnytskyi National University. Technical sciences. https://doi.org/10.31891/2307-5732-2024-335-3-44.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/8/10.md

Title

Real-Time Cloud Monitoring Solution Using Prometheus Tool and Predictive Analysis using Arima Model

Summary

Prometheus, an open-source tool, offers flexibility and integration with various application-specific exporters, allowing for real-time monitoring and predictive analysis on resource usage.

Reference: APA reference to the actual paper

Dash, D., & Student, B. (2018). Real-Time Cloud Monitoring Solution Using Prometheus Tool and Predictive Analysis using Arima Model. .

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/8/2.md

Title

Application Monitoring and Telemetry Analytics

Summary

Connecting Kafka, OpenTelemetry, Prometheus, and Grafana can enhance system reliability, agility, and performance, driving business success in the digital era.

Reference: APA reference to the actual paper

P, S., C, V., & P, S. (2024). Application Monitoring and Telemetry Analytics. 2024 7th International Conference on Circuit Power and Computing Technologies (ICCPCT), 1, 1559-1565. https://doi.org/10.1109/ICCPCT61902.2024.10673415.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/8/3.md

Title

Enhanced Visibility for Real-time Monitoring and Alerting in Kubernetes by Integrating Prometheus,Prometheus, Grafana, Loki, and Alerta

Summary

Prometheus, Grafana, and Alerta provide a comprehensive approach for monitoring Kubernetes, enabling deep visibility into infrastructure and proactive identification of issues.

Reference: APA reference to the actual paper

Sai, K. (2024). Enhanced Visibility for Real-time Monitoring and Alerting in Kubernetes by Integrating Prometheus,Prometheus, Grafana, Loki, and Alerta. INTERANTIONAL JOURNAL OF SCIENTIFIC RESEARCH IN ENGINEERING AND MANAGEMENT. https://doi.org/10.55041/ijsrem35639.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/8/4.md

Title

Application Performance Monitoring System Design Using Opentelemetry and Grafana Stack

Summary

The monitoring system can collect real-time metrics data with an average delay of 13.8 seconds and detect anomalies in the app, but may negatively impact application performance by reducing request throughput by 23.32% and increasing request latency by 22.80%.

Reference: APA reference to the actual paper

Kusuma, G., & Oktiawati, U. (2022). Application Performance Monitoring System Design Using Opentelemetry and Grafana Stack. Journal of Internet and Software Engineering. https://doi.org/10.22146/jise.v3i1.5000.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/8/5.md

Title

Jobstats: A Slurm-Compatible Job Monitoring Platform for CPU and GPU Clusters

Summary

The open-source job monitoring platform Prometheus and Grafana can be used for batch, interactive, and Open OnDemand jobs, creating dashboards, utilization reports, and alerts.

Reference: APA reference to the actual paper

Plazonic, J., Halverson, J., & Comi, T. (2023). Jobstats: A Slurm-Compatible Job Monitoring Platform for CPU and GPU Clusters. Practice and Experience in Advanced Research Computing.

https://doi.org/10.1145/3569951.3604396.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/8/6.md

Title

Real-Time Server Monitoring and Notification System with Prometheus, Grafana, and Telegram Integration

Summary

The integration of Prometheus, Grafana, and Telegram in server monitoring shows excellent performance, with an average percentage of 85.33% in helping identify and resolve overload issues.

Reference: APA reference to the actual paper

Yudha, M., Saputra, E., Arief, S., Wijayaningrum, V., Yan, T., & Syaifudin, W. (2024). Real-Time Server Monitoring and Notification System with Prometheus, Grafana, and Telegram Integration. 2024 ASU International Conference in Emerging Technologies for Sustainability and Intelligent Systems (ICETSIS), 1808-1813. https://doi.org/10.1109/ICETSIS61505.2024.10459488.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/8/7.md

Title

Monitoring System of OpenStack Cloud Platform Based on Prometheus

Summary

Prometheus and Grafana effectively improve the reliability and stability of OpenStack cloud platform.

Reference: APA reference to the actual paper

Chen, L., Xian, M., & Liu, J. (2020). Monitoring System of OpenStack Cloud Platform Based on Prometheus. 2020 International Conference on Computer Vision, Image and Deep Learning (CVIDL), 206-209. https://doi.org/10.1109/cvidl51233.2020.0-100.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/8/8.md

Title

Selecting a Monitoring Technology for a Control System of Distributed Oil Production Facilities

Summary

A system based on Prometheus and Grafana was selected for effective monitoring of oil production facilities due to their open source code and large library of ready-made templates.

Reference: APA reference to the actual paper

Lobur, M., & Malyar, M. (2024). Selecting a Monitoring Technology for a Control System of Distributed Oil Production Facilities. Energy engineering and control systems. https://doi.org/10.23939/jeecs2024.01.028.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/8/9.md

Title

Monitoring the performance of the SKA CICD infrastructure

Summary

Prometheus and Grafana are effective tools for monitoring and debugging the SKA CICD infrastructure, enabling real-time analysis and reasoning on archiving, monitoring, and system health.

Reference: APA reference to the actual paper

Di Carlo, M., Dolci, M., Harding, P., Ylmaz, U., Maia, D., Morgado, B., Ribeiro, B., Nunes, D., Regateiro, D., Paulo, M., & Santos, M. (2022). Monitoring the performance of the SKA CICD infrastructure. , 12189, 121891O - 121891O-8. https://doi.org/10.1117/12.2627025.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/9/0.md

Question

What are the best practices for integrating centralized logging with monitoring systems to enhance troubleshooting?

Summary

These studies suggest that best practices for integrating centralized logging with monitoring systems to enhance troubleshooting include using machine learning for log analysis, implementing automation strategies for deployment and monitoring, employing a centralized log management system for unified log views, and enhancing logging code quality to improve failure diagnosis.

Related Searches

- Best practices for centralized logging implementation
- How does centralized logging improve troubleshooting efficiency?
- Techniques for monitoring microservices with logs

C:/Users/user/Desktop/docs/ug/thesis/answers/q/9/1.md

Title

Analysis of Log Files to Enable Smart-Troubleshooting in Industry 4.0: A Systematic Mapping Study

Summary

Log analysis is important for troubleshooting purposes, and further research is needed in real-time log analysis, anomaly detection, and integrating log analysis with other Industry 4.0 technologies.

Reference: APA reference to the actual paper

Partovian, S., Bucaioni, A., Flammini, F., & Thornadtsson, J. (2024). Analysis of Log Files to Enable Smart-Troubleshooting in Industry 4.0: A Systematic Mapping Study. IEEE Access, 12, 147640-147658. https://doi.org/10.1109/ACCESS.2023.3342365.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/9/10.md

Title

Improving Software Diagnosability via Log Enhancement

Summary

LogEnhancer automatically enhances existing logging code to aid in future post-failure debugging, reducing the set of potential root failure causes with negligible overheads.

Reference: APA reference to the actual paper

Yuan, D., Zheng, J., Park, S., Zhou, Y., & Savage, S. (2012). Improving Software Diagnosability via Log Enhancement. ACM Trans. Comput. Syst., 30, 4:1-4:28. https://doi.org/10.1145/2110356.2110360.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/9/2.md

Title

Microservices Monitoring with Event Logs and Black Box Execution Tracing

Summary

Integrating centralized logging with monitoring systems can enhance troubleshooting by combining microservices logs with black box tracing, which reduces the size of collected data and improves troubleshooting decisions.

Reference: APA reference to the actual paper

Cinque, M., Della Corte, R., & Pecchia, A. (2019). Microservices Monitoring with Event Logs and Black Box Execution Tracing. IEEE Transactions on Services Computing, 15, 294-307. https://doi.org/10.1109/tsc.2019.2940009.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/9/3.md

Title

Implementation of Centralized Logging and Log Analysis in Cloud Transition

Summary

Integrating centralized logging with monitoring systems can enhance troubleshooting by collecting log data from multiple servers and processing it for problem detection and system performance monitoring.

Reference: APA reference to the actual paper

Vainio, A. (2018). Implementation of Centralized Logging and Log Analysis in Cloud Transition. .

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/9/4.md

Title

Logging Practices in Software Engineering: A Systematic Mapping Study

Summary

This study highlights the need for more research on logging practices, emphasizing the importance of understanding why to log and how well logging practices perform in software engineering.

Reference: APA reference to the actual paper

Gu, S., Rong, G., Zhang, H., & Shen, H. (2023). Logging Practices in Software Engineering: A Systematic Mapping Study. IEEE Transactions on Software Engineering, 49, 902-923. https://doi.org/10.1109/TSE.2022.3166924.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/9/5.md

Title

Streamlined Deployment and Monitoring of Cloud-Native Applications on AWS with Kubernetes Prometheus Grafana

Summary

Implementing an automation strategy for cloud deployment can streamline the process, reduce errors, and save time and resources while improving application management and monitoring.

Reference: APA reference to the actual paper

Abirami, T., Mapari, S., Jayadharshini, P., Krishnasamy, L., & Vigneshwaran, R. (2023). Streamlined Deployment and Monitoring of Cloud-Native Applications on AWS with Kubernetes Prometheus Grafana. 2023 International Conference on Advances in Computation, Communication and Information Technology (ICAICCIT), 1149-1155. https://doi.org/10.1109/ICAICCIT60255.2023.10465818.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/9/6.md

Title

IT Infrastructure Anomaly Detection and Failure Handling: A Systematic Literature Review Focusing on Datasets, Log Preprocessing, Machine & Deep Learning Approaches and Automated Tool

Summary

Machine learning and deep learning-based classification approaches enhance performance in IT infrastructure anomaly detection and failure handling compared to traditional rule-based and method-based approaches.

Reference: APA reference to the actual paper

Bhanage, D., Pawar, A., & Kotecha, K. (2021). IT Infrastructure Anomaly Detection and Failure Handling: A Systematic Literature Review Focusing on Datasets, Log Preprocessing, Machine & Deep Learning Approaches and Automated Tool. IEEE Access, 9, 156392-156421. https://doi.org/10.1109/ACCESS.2021.3128283.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/9/7.md

Title

Characterizing Direct Monitoring Techniques in Software Systems

Summary

This paper proposes a method to characterize monitoring techniques in software systems, highlighting the importance of considering system and failure type when selecting a monitoring technique.

Reference: APA reference to the actual paper

Cinque, M., Cotroneo, D., Della Corte, R., & Pecchia, A. (2016). Characterizing Direct Monitoring Techniques in Software Systems. IEEE Transactions on Reliability, 65, 1665-1681. https://doi.org/10.1109/TR.2016.2570564.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/9/8.md

Title

A Survey of Software Log Instrumentation

Summary

This survey reveals that high-quality logging code in software systems can significantly improve log analysis tasks, benefiting DevOps practitioners and researchers.

Reference: APA reference to the actual paper

Chen, B., & Jiang, Z. (2021). A Survey of Software Log Instrumentation. ACM Computing Surveys (CSUR), 54, 1 - 34. https://doi.org/10.1145/3448976.

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/answers/q/9/9.md

Title

Effektiv logghantering och monitorering av IT-infrastruktur med Elastic stack

Summary

Integrating centralized logging with monitoring systems using the Elastic stack can help identify and troubleshoot problems faster and easier.

Reference: APA reference to the actual paper

Salonen, M. (2018). Effektiv logghantering och monitorering av IT-infrastruktur med Elastic stack. .

Concensus Link

C:/Users/user/Desktop/docs/ug/thesis/doc - flow.md

1. **Cover Page**
2. **Table of Contents**
3. **List of Figures** (if applicable)
4. **List of Tables** (if applicable)
5. **Abstract**
6. **Introduction**
7. **Background**:
8. **Literature Review**

C:/Users/user/Desktop/docs/ug/thesis/docs/systematic-review.md

Systematic Review

A systematic review is a summary of the scientific literature related to a specific question. Only studies that meet a specific selection criteria are included in the review, allowing authors to draw conclusions relevant to the research question.

C:/Users/user/Desktop/docs/ug/thesis/feedback.md

Feed Back

- Change your topic to reflect what you want to do
- The part of your project that deals with different platforms should be rooted in research

---

C:/Users/user/Desktop/docs/ug/thesis/how to.md

How To?

1. Questions

With chat GPT.

Example: What are research questions relating to streamlining deployment, monitory, maintenance?

This should give you a list of question, maybe even broken down into sections.

2. Gathering Papers

With consensus ai, the web platform.

You pass in each question, and it would give you answers based on existing academic literature. The answers also references the academic literature.

Consensus AI can answer questions and point you to relevant papers, but it doesn't manage references or generate proper citations. Hence the need for this next part.

2.1. Tracking and Managing Papers

EndNote and Mendeley can manage references, generate citations, and store them in an organized library, ensuring that proper referencing is done for the papers.

3. Chat PDF

While consensus AI can answer questions using relevant papers, very little about each paper is actually said.

Using the reference from the previous section, you can feed in the papers into Chat PDF and it will summarize each paper.

The difference is, with consensus you generate a lead on what papers might be relevant in answering your question. With ChatPDF you get a summary of each paper.

4. Consolidation

You go back to Chat GPT and ask a more detailed and elaborated question. Providing specifics from you questions and summaries to elicit a response.

You then copy this response and humanize it, using your own judgment and understanding.

4.1. Improving your writing

You can use tools like Grammarly/Paperpal to help improve your writing

---

C:/Users/user/Desktop/docs/ug/thesis/lib/jenkins.md

Jenkins

Jenkins is an open-source automation tool commonly used for **continuous integration (CI)** and **continuous deployment (CD)** in software development. It helps automate building, testing, and deploying applications, streamlining development workflows.

Here's an overview of Jenkins as a deployment automation tool:

Key Features of Jenkins for Deployment Automation:

1. **Pipeline as Code**:
    - Jenkins uses declarative and scripted pipelines written in **Jenkinsfile**, enabling version control of deployment pipelines.
2. **Integration with Tools**:
    - Supports integration with version control systems (Git, GitHub, Bitbucket), build tools (Maven, Gradle), testing frameworks (JUnit, Selenium), and cloud platforms.
3. **Plugins Ecosystem**:
    - Over 1,800 plugins allow integrations with tools like Docker, Kubernetes, Terraform, and others for advanced deployment scenarios.
4. **Cross-Platform**:
    - Works across various platforms and operating systems.
5. **Scalability**:
    - Jenkins can scale using master-agent architecture, distributing workloads across multiple nodes.
6. **Notification Support**:
    - Integrates with email, Slack, and other communication tools to notify teams about build and deployment statuses.

Steps to Use Jenkins for Deployment Automation:

1. Install Jenkins:

- Download and install Jenkins on your preferred operating system.
- Configure necessary environment variables (e.g., JAVA_HOME).

2. Set Up a Job/Pipeline:

- **Freestyle Job**: Simplest setup where you manually configure steps.
- **Pipeline**: Define the pipeline in a `Jenkinsfile`.

3. Configure Version Control Integration:

- Connect to your Git repository using credentials.
- Pull code automatically for builds.

4. Build the Application:

- Use build tools like Maven, Gradle, or custom scripts to compile your code.

5. Run Tests:

- Automate unit, integration, and end-to-end testing.

6. Create Deployment Steps:

- Deploy artifacts to servers, container registries, or cloud platforms.
- Use plugins for Docker, Kubernetes, or cloud providers like AWS, GCP, or Azure.

7. Automate Rollbacks:

- Implement strategies for rolling back changes in case of failures using previous build artifacts.

8. Set Up Notifications:

- Configure email or chat notifications to alert team members about the status of deployments.

Example Pipeline Script:

```
pipeline {
    agent any
    stages {
        stage('Clone Repository') {
            steps {
                git 'https://github.com/your-repo.git'
            }
        }
```

```
        stage('Build') {
            steps {
                sh './gradlew build'
            }
        }
        stage('Test') {
            steps {
                sh './gradlew test'
            }
        }
        stage('Deploy') {
            steps {
                sh 'scp build/libs/app.jar user@server:/path/to/deploy'
                sh 'ssh user@server "systemctl restart app.service"'
            }
        }
    }
    post {
        always {
            echo 'Pipeline completed!'
        }
        failure {
            mail to: 'team@example.com', subject: 'Build Failed', body: 'Check
Jenkins!'
        }
    }
}
```

Common Jenkins Plugins for Deployment:

1. **Git Plugin**: Integrates with Git repositories.
2. **Pipeline Plugin**: Enables pipeline features.
3. **SSH Agent Plugin**: Runs commands on remote servers.
4. **Docker Plugin**: Builds and deploys Docker containers.
5. **Kubernetes Plugin**: Manages Kubernetes deployments.
6. **Notification Plugins**: For Slack, email, or other tools.

Would you like detailed help with configuring Jenkins for a specific deployment scenario?

C:/Users/user/Desktop/docs/ug/thesis/questions.md

Here are research questions related to streamlining deployment, monitoring, and maintenance in software systems:

Deployment

1. How can deployment pipelines be optimized to reduce deployment time and errors?

2. What are the most effective practices for implementing zero-downtime deployment strategies in cloud-native applications?
3. How does the use of containerization (e.g., Docker) impact the reliability and efficiency of deployment processes?
4. How can infrastructure as code (IaC) tools (e.g., Terraform, Ansible) streamline the setup and teardown of deployment environments?
5. What is the impact of feature flags on the speed and reliability of software deployment?

Monitoring

6. How can AI and machine learning be applied to improve anomaly detection in real-time system monitoring?
7. What are the challenges of implementing observability in microservices architectures, and how can they be addressed?
8. How effective are open-source tools (e.g., Prometheus, Grafana) compared to proprietary solutions in system monitoring?
9. What are the best practices for integrating centralized logging with monitoring systems to enhance troubleshooting?
10. How can monitoring systems be designed to minimize resource overhead while maintaining comprehensive coverage?

Maintenance

11. What are the most effective methods for automating routine maintenance tasks in software systems?
12. How can predictive analytics be used to anticipate and prevent system failures?
13. What strategies can be employed to simplify the maintenance of legacy systems without extensive refactoring?
14. How does the implementation of continuous integration/continuous deployment (CI/CD) pipelines affect the long-term maintainability of a software system?
15. What role does documentation play in the ease of maintaining complex software systems?

Combined Topics

16. How can integrated DevOps practices streamline deployment, monitoring, and maintenance workflows?
17. What is the relationship between system monitoring data and proactive maintenance activities?
18. How do serverless architectures affect the deployment, monitoring, and maintenance lifecycle compared to traditional infrastructure?
19. What are the cost implications of automating deployment, monitoring, and maintenance processes in large-scale systems?
20. How can a unified platform for deployment, monitoring, and maintenance improve operational efficiency?

These questions can guide research efforts in optimizing and modernizing software lifecycle management processes.

C:/Users/user/Desktop/docs/ug/thesis/thesis - flow.md

1. **Start with questions on a topic.**

2. **Look for materials to help answer those questions.**
3. **Evaluate and synthesize the materials.**
4. **Identify gaps, new applications, or iterations to contribute.**
5. **Develop and document your findings or contributions.**
6. **Share insights through publications, presentations, or other mediums.**