10 REFERENCES

[1] J. Germain, “Programming - Commenting,” *School of Computing University Of Utah*. https://www.cs.utah.edu/~germain/PPS/Topics/commenting.html (accessed Jan. 01, 2020).

[2] L. M. Karam, “The Importance of Good Software Architecture - DZone Integration,” *dzone.com*. https://dzone.com/articles/the-importance-of-a-good-software-architecture (accessed Jan. 06, 2020).

[3] N. Sinha, “Concept of Comments in Computer Programming,” *GeeksforGeeks*, Aug. 29, 2018. https://www.geeksforgeeks.org/concept-of-comments-in-computer-programming/ (accessed Jan. 01, 2020).

[4] B. Sourour, “Putting comments in code: the good, the bad, and the ugly.,” *freeCodeCamp.org*, Apr. 20, 2017. https://www.freecodecamp.org/news/code-comments-the-good-the-bad-and-the-ugly-be9cc65fbf83/ (accessed Jan. 01, 2020).

[5] D. Van Tassel, “Comments in programming languages.” http://www.gavilan.edu/csis/languages/comments.html (accessed Jan. 01, 2020).

[6] GeeksForGeeks, “Comments in Java - GeeksforGeeks.” https://www.geeksforgeeks.org/comments-in-java/ (accessed Jan. 02, 2020).

[7] L. Moreno, J. Aponte, G. Sridhara, A. Marcus, L. Pollock, and K. Vijay-Shanker, “Automatic generation of natural language summaries for Java classes,” in *2013 21st International Conference on Program Comprehension (ICPC)*, San Francisco, CA, USA, May 2013, pp. 23–32. doi: 10.1109/ICPC.2013.6613830.

[8] E. Wong, J. Yang, and L. Tan, “Autocomment: Mining question and answer sites for automatic comment generation,” in *in Automated Software Engineering (ASE), 2013 IEEE/ACM 28th International Conference on, Nov 2013*, pp. 562–567.

[9] P. W. McBurney and C. McMillan, “Automatic documentation generation via source code summarization of method context,” in *Proceedings of the 22nd International Conference on Program Comprehension - ICPC 2014*, Hyderabad, India, 2014, pp. 279–290. doi: 10.1145/2597008.2597149.

[10] S. Haiduc, J. Aponte, L. Moreno, and A. Marcus, “On the Use of Automated Text Summarization Techniques for Summarizing Source Code,” in *2010 17th Working Conference on Reverse Engineering*, Beverly, MA, USA, Oct. 2010, pp. 35–44. doi: 10.1109/WCRE.2010.13.

[11] S. Reddy, “Vector space model,” *Wikipedia*. Oct. 18, 2021. Accessed: Nov. 07, 2021. [Online]. Available: https://en.wikipedia.org/w/index.php?title=Vector_space_model&oldid=1050529441

[12] L. Europe, “Latent semantic analysis,” *Wikipedia*. Aug. 21, 2021. Accessed: Nov. 07, 2021. [Online]. Available: https://en.wikipedia.org/w/index.php?title=Latent_semantic_analysis&oldid=1039966183

[13] S. Panichella, “CODES: mining source code Descriptions from develop ers discussions,” Jun. 2014.

[14] S. Panichella, J. Aponte, M. Di Penta, A. Marcus, and G. Canfora, “Mining source code descriptions from developer communications.” https://ieeexplore.ieee.org/document/6240510 (accessed Nov. 07, 2021).
[15] D. M. Blei, A. Y. Ng, and M. I. Jordan, “Latent Dirichlet Allocation,” *Journal of Machine Learning Research*, vol. 3, no. Jan, pp. 993–1022, 2003.
[16] D. Movshovitz-Attias and W. W. Cohen, “Natural Language Models for Predicting Programming Comments,” p. 6.
[17] M. M. Rahman, C. K. Roy, and I. Keivanloo, “Recommending Insightful Comments for Source Code using Crowdsourced Knowledge,” *2015 IEEE 15th International Working Conference on Source Code Analysis and Manipulation (SCAM)*, pp. 81–90, Sep. 2015, doi: 10.1109/SCAM.2015.7335404.
[18] Y. Oda *et al.*, “Learning to Generate Pseudo-Code from Source Code Using Statistical Machine Translation,” in *2015 30th IEEE/ACM International Conference on Automated Software Engineering (ASE)*, Lincoln, NE, Nov. 2015, pp. 574–584. doi: 10.1109/ASE.2015.36.
[19] K. Cho, B. van Merrienboer, D. Bahdanau, and Y. Bengio, “On the Properties of Neural Machine Translation: Encoder-Decoder Approaches,” *arXiv:1409.1259 [cs, stat]*, Oct. 2014, Accessed: Nov. 07, 2021. [Online]. Available: http://arxiv.org/abs/1409.1259
[20] S. Iyer, I. Konstas, A. Cheung, and L. Zettlemoyer, “Summarizing Source Code using a Neural Attention Model,” in *Proceedings of the 54th Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)*, Berlin, Germany, 2016, pp. 2073–2083. doi: 10.18653/v1/P16-1195.
[21] Wenhao Zheng, Hong-Yu Zhou, Ming Li, Jianxin Wu, “Code Attention: Translating Code to Comments by Exploiting Domain Features.” https://arxiv.org/pdf/1709.07642.pdf%7D.
[22] X. Hu, G. Li, X. Xia, D. Lo, and Z. Jin, “Deep code comment generation,” May 2018, pp. 200–210. doi: 10.1145/3196321.3196334.
[23] Y. Liang and K. Q. Zhu, “Automatic Generation of Text Descriptive Comments for Code Blocks,” p. 8.
[24] W. U. Ahmad, S. Chakraborty, B. Ray, and K.-W. Chang, “A Transformer-based Approach for Source Code Summarization,” *arXiv:2005.00653 [cs, stat]*, May 2020, Accessed: Nov. 07, 2021. [Online]. Available: http://arxiv.org/abs/2005.00653
[25] Y. Wan *et al.*, “Improving Automatic Source Code Summarization via Deep Reinforcement Learning,” *arXiv:1811.07234 [cs]*, Nov. 2018, Accessed: Nov. 07, 2021. [Online]. Available: http://arxiv.org/abs/1811.07234
[26] M. Allamanis, H. Peng, and C. Sutton, “A Convolutional Attention Network for Extreme Summarization of Source Code,” p. 10.
[27] L. Mou, G. Li, L. Zhang, T. Wang, and Z. Jin, “Convolutional Neural Networks over Tree Structures for Programming Language Processing,” *arXiv:1409.5718 [cs]*, Dec. 2015, Accessed: Nov. 07, 2021. [Online]. Available: http://arxiv.org/abs/1409.5718
[28] N. Khamis, R. Witte, and J. Rilling, *Automatic Quality Assessment of Source Code Comments: The JavadocMiner*, vol. 6177. 2010, p. 79. doi: 10.1007/978-3-642-13881-2_7.

[29] D. Steidl, B. Hummel, and E. Juergens, “Quality analysis of source code comments,” in *2013 21st International Conference on Program Comprehension (ICPC)*, San Francisco, CA, USA, May 2013, pp. 83–92. doi: 10.1109/ICPC.2013.6613836.

[30] X. Song, H. Sun, X. Wang, and J. Yan, “A Survey of Automatic Generation of Source Code Comments: Algorithms and Techniques,” *IEEE Access*, vol. PP, pp. 1–1, Jul. 2019, doi: 10.1109/ACCESS.2019.2931579.

[31] “Comparing Common Programming Languages to Parse Big XML File in Terms of Executing Time, Memory Usage, CPU Consumption and Line Number on Two Platforms,” *ResearchGate*. https://www.researchgate.net/publication/309022617_Comparing_Common_Programming_Languages_to_Parse_Big_XML_File_in_Terms_of_Executing_Time_Memory_Usage_CPU_Consumption_and_Line_Number_on_Two_Platforms (accessed Jan. 10, 2020).

[32] P. Niedringhaus, “Using Java to Read Really, Really Large Files,” *Medium*, Jan. 04, 2019. https://itnext.io/using-java-to-read-really-really-large-files-a6f8a3f44649 (accessed Jan. 10, 2020).

[33] C. Richardson, “Microservices Pattern: Microservice Architecture pattern,” *microservices.io*. http://microservices.io/patterns/microservices.html (accessed Apr. 05, 2021).

[34] J. P. Irudayaraj, “Adoption Advantages Of Micro-Service Architecture In Software Industries,” vol. 8, no. 09, p. 4, 2019.

[35] Paolo Di Francesco, Patricia Lago, and Ivano Malavolta, “(PDF) Research on Architecting Microservices: Trends, Focus, and Potential for Industrial Adoption.” https://www.researchgate.net/publication/317071768_Research_on_Architecting_Microservices_Trends_Focus_and_Potential_for_Industrial_Adoption (accessed Apr. 05, 2021).

[36] Jetinder Singh, “The What, why, and How of a Microservices Architecture | by Hashmap | HashmapInc | Medium.” https://medium.com/hashmapinc/the-what-why-and-how-of-a-microservices-architecture-4179579423a9 (accessed Apr. 05, 2021).

[37] C. M. Aderaldo, N. C. Mendonça, C. Pahl, and P. Jamshidi, “Benchmark Requirements for Microservices Architecture Research,” in *2017 IEEE/ACM 1st International Workshop on Establishing the Community-Wide Infrastructure for Architecture-Based Software Engineering (ECASE)*, May 2017, pp. 8–13. doi: 10.1109/ECASE.2017.4.

[38] B. Terzić, V. Dimitrieski, S. Kordić (Aleksić), and I. Luković, *A Model-Driven Approach to Microservice Software Architecture Establishment*. 2018, p. 80. doi: 10.15439/2018F370.

[39] S. Barakat, “Monitoring and Analysis of Microservices Performance,” *Journal of Computer Science and Control Systems*, vol. 10, pp. 19–22, May 2017.

[40] Docker, “Docker overview,” *Docker Documentation*, Oct. 22, 2021. https://docs.docker.com/get-started/overview/ (accessed Oct. 27, 2021).

[41] Docker, “Swarm mode key concepts,” *Docker Documentation*, Oct. 22, 2021. https://docs.docker.com/engine/swarm/key-concepts/ (accessed Oct. 27, 2021).

[42] Kubernetes, "What is Kubernetes?" *Kubernetes*. https://kubernetes.io/docs/concepts/overview/what-is-kubernetes/ (accessed Oct. 27, 2021).
[43] Localstack, "Integrations," *Docs*. https://docs.localstack.cloud/integrations/ (accessed Oct. 27, 2021).
[44] Aqua, "Docker Containers vs. Virtual Machines," *Aqua*. https://www.aquasec.com/cloud-native-academy/docker-container/docker-containers-vs-virtual-machines/ (accessed Oct. 27, 2021).
[45] Molly Clancy, "Docker Containers vs. VMs: Pros and Cons of Containers and Virtual Machines," *Backblaze Blog | Cloud Storage & Cloud Backup*, Oct. 15, 2021. https://www.backblaze.com/blog/vm-vs-containers/ (accessed Oct. 27, 2021).
[46] Simran Arora, "Docker vs. Virtual Machines: Differences You Should Know - Cloud Academy." https://cloudacademy.com/blog/docker-vs-virtual-machines-differences-you-should-know/ (accessed Oct. 27, 2021).
[47] Weave, "Business Benefits of Kubernetes." https://www.weave.works/blog/business-benefits-of-kubernetes (accessed Oct. 27, 2021).
[48] D. Fontani, "Five good reasons for using Kubernetes," *Medium*, Nov. 15, 2020. https://towardsdatascience.com/5-reason-for-using-kubernetes-b7ade82eda90 (accessed Oct. 27, 2021).
[49] Localstack, *Overview*. LocalStack, 2021. Accessed: Oct. 27, 2021. [Online]. Available: https://github.com/localstack/localstack
[50] Nghia Le, "Architectural Driver," 17:06:23 UTC. Accessed: Aug. 08, 2021. [Online]. Available: https://www.slideshare.net/NghiaLe36/architectural-driver
[51] J. K. Bergey, M. J. Fisher, and L. G. Jones, "Use of the Architecture Tradeoff Analysis MethodSM (ATAMSM) in Source Selection of Software-Intensive Systems:" Defense Technical Information Center, Fort Belvoir, VA, Jun. 2002. doi: 10.21236/ADA403813.
[52] Software Engineering Institute, "Architecture Tradeoff Analysis Method Collection." https://resources.sei.cmu.edu/library/asset-view.cfm?assetid=513908 (accessed Apr. 14, 2021).
[53] Dan Shewan, "How to Do a SWOT Analysis for Your Small Business (with Examples)." https://www.wordstream.com/blog/ws/2017/12/20/swot-analysis (accessed Oct. 27, 2021).
[54] Stephen J. Bigelow, "What is a SWOT Analysis?" *SearchCIO*. https://searchcio.techtarget.com/definition/SWOT-analysis-strengths-weaknesses-opportunities-and-threats-analysis (accessed Oct. 27, 2021).
[55] kalopsia, "Software Engineering | COCOMO Model," *GeeksforGeeks*, Apr. 13, 2018. https://www.geeksforgeeks.org/software-engineering-cocomo-model/ (accessed Oct. 27, 2021).
[56] Java t point, "Software Engineering | COCOMO Model - javatpoint," *www.javatpoint.com*. https://www.javatpoint.com/cocomo-model (accessed Oct. 27, 2021).
[57] mayankjtp, "Constructive Cost Model (COCOMO)," *Tutorial And Example*, Feb. 01, 2020. https://www.tutorialandexample.com/constructive-cost-model-cocomo/ (accessed Oct. 27, 2021).

[58] Nuwan Samarasinghe, “AWS Price Calculator saved.” [Online]. Available: https://calculator.aws/#/estimate?id=4250dd2e26f70070c6670de56e9eacd05277032f

[59] Torsten Mallée, “ROI of IT projects: 3-step calculation example.” https://www.aeb.com/intl-en/magazine/articles/3-step-roi-calculation-it-projects.php (accessed Oct. 27, 2021).

[60] Mona Lebied, “IT ROI Made Easy: How to Calculate The ROI For IT Projects,” *BI Blog | Data Visualization & Analytics Blog | datapine*, May 04, 2018. https://www.datapine.com/blog/how-to-calculate-it-roi/ (accessed Oct. 27, 2021).

[61] brightlineit, “How to Calculate ROI for IT Projects | Brightline IT | Planning for IT,” *Brightline Technologies*, Jun. 12, 2018. https://brightlineit.com/how-to-calculate-roi-for-it-projects/ (accessed Oct. 27, 2021).

[62] ANDREW BEATTIE, “How to Calculate Return on Investment (ROI),” *Investopedia*. https://www.investopedia.com/articles/basics/10/guide-to-calculating-roi.asp (accessed Oct. 27, 2021).

[63] Emily Guy Birken and Benjamin Curry, “Return on Investment (ROI) Definition – Forbes Advisor.” https://www.forbes.com/advisor/investing/roi-return-on-investment/ (accessed Aug. 08, 2021).

[64] Peter Landau, “Cost Benefits Analysis for Projects - A Step-by-Step Guide,” *ProjectManager.com*, Jun. 09, 2021. https://www.projectmanager.com/blog/cost-benefit-analysis-for-projects-a-step-by-step-guide (accessed Aug. 08, 2021).

[65] Matei Ripeanu, “Implementing the CBAM.” https://people.ece.ubc.ca/matei/EECE417/BASS/ch12lev1sec3.html (accessed Aug. 08, 2021).

[66] K. Rick, J. Asundi, and M. Klein, “(PDF) Quantifying the costs and benefits of architectural decisions.” https://www.researchgate.net/publication/3895392_Quantifying_the_costs_and_benefits_of_architectural_decisions (accessed Aug. 08, 2021).