Reading List for CAS-703

Seminal Papers in Software Engineering

Papers are selected for their overall significance.

[1] D .L. Parnas. "On the criteria to be used in decomposing systems into modules." *Communications of the ACM*, vol. 15, pp.1053-1058, 1972. doi: 10.1145/361598.361623

[2] D.L. Parnas, P.C. Clements, and D.M. Weiss. "The Modular Structure of Complex Systems." *ICSE'84 Proceedings of the 7th International Conference on Software Engineering,* 1984, pp.408-417. Available: http://dl.acm.org/citation.cfm?id=800054.801999

[3] Melvin E. Conway. "How Do Committees Invent? " *Datamation, vol. 14, pp. 28—31, April 1968.* Available: http://www.melconway.com/Home/Committees_Paper.html

[4] E.M. Clarke, E.A. Emerson, A.P. Sistla. "Automatic verification of finite-state concurrent systems using temporal logic specifications." *ACM Transactions on Programming Languages and Systems,* vol. 8, pp. 244-263, Apr.1986. doi: 10.1145/5397.5399

[5] Watts S. Humphrey. "Characterizing the Software Process: A Maturity Framework." *IEEE Software,* vol.5, pp. 73-79,Mar.1988. doi: 10.1109/52.2014

[6] James C. King. Symbolic execution and program testing. CACM 19(7), 385-394, July 1976. doi:10.1145/360248.360252

Introduction to Modelling, MDE, Modelling Notations, and Model Management and Transformations

[7] J. Ludewig, Models in Software Engineering - An Introduction, In *Software and Systems Modeling*, 2(1): pp. 5-14, (March 2003).

[8] Schmidt, D.C.: Model-Driven Engineering. *IEEE Computer* vol. 39, no. 2, 2006.

[9] Jackson, D., Alloy: a lightweight object modelling notation. In *ACM Transacitons on Software Engineering and Methodology,* 11(2): 256-290 (Apr. 2002) and Alloy tutorial on Alloy website at MIT.

[10] Harel, D, Rumpe, B. Meaningful Modeling:What's the Semantics of "Semantics"?, *IEEE Computer*, 2004

[11] Kolovos, D,S., Paige R.F., Polack, F. Merging Models with the Epsilon Merging Language (EML). In *Proceedings of the 9th International Conference on*

Model Driven Engineering Languages and Systems (MoDELS), LNCS 4199, pp. 215-229, 2006.

[12] Desharnais J., Frappier M., Khedri R., and Mili A. Integration of sequential scenarios. IEEE Transactions on Software Engineering, Volume: 24 , Issue: 9, pp. 695 - 708. 1998.

Feature Modeling

[13] Algebra of Product Families. Höfner, P.; Khedri, R.; and Möller, B. *Software and Systems Modeling*, 10(2): 161 -- 182. 2011.

[14] Supplementing Product Families with Behaviour. Höfner, P.; Khedri, R.; and Möller, B. *International Journal of Informatics*, 5(1 -- 2 Part 2): \hbox245--266. 2011. Special Issue II: Foundations and Practice of Systems and Software Engineering Festschrift in Honor of Manfred Broy

[15] An Aspect-Oriented Language for Feature-Modeling. Zhang, Q.; Khedri, R.; and Jaskolka, J. *Journal of Ambient Intelligence and Humanized Computing*, 5: 343 -- 356. 2014.

Security

[16] Privacy and Security by Design: An Enterprise Architecture Approach. Ann Cavoukian and Mark Dixon. Information and Privacy Commissioner Ontario, Canada. September 2013.

Automotive Software Engineering

[17] Automotive Software Engineering: A Systematic Mapping Study. Alireza Haghighatkhah, Ahmad Banijamali, Olli-Pekka Pakanen, Markku Oivo, and Pasi Kuvaja Journal of Systems and Software 128, March 2017. DOI: 10.1016/j.jss.2017.03.005

[18] Software and Hardware Design Challenges in Automotive Embedded System. Rajeshwari Hegde, Geetishree Mishra, and K S Gurumurthy. International Journal of VLSI design & Communication Systems (VLSICS) Vol.2, No.3, September 2011. DOI: 10.5121/vlsic.2011.2314

[19] Towards a process and tool-chain for service-oriented automotive software engineering. Krüger, Ingolf and Gupta, Diwaker and Mathew, Reena and Moorthy, Praveen and Phillips, Walter and Rittmann, Sabine and Ahluwalia, Jaswinder. Proceedings of the ICSE 2004 Workshop on Software Engineering for Automotive Systems (SEAS) DOI:10.1049/ic:20040337

Microservice Architecture

[20] Overview of a Domain-Driven Design Approach to Build Microservice-Based Applications. Roland H. Steinegger, Pascal Giessler, Benjamin Hippchen and Sebastian Abeck Proceedings of the 3rd International Conference on Advances and Trends in Software Engineering (SOFTENG 2017). Pages 79—87, April 2017.

[21] Challenges of Microservices Architecture: A Survey on the State of the Practice. Javad Ghofrani and Daniel Lübke. Proceedings of the 10th Central European Workshop on Services and their Composition. Dresden, Germany, February 8–9, 2018.

[22] Microservices in Practice: A Survey Study. Markos Viggiato, Ricardo Terra, Henrique Rocha, Marco Tulio Valente, and Eduardo Figueiredo. Proceedings of 6th Workshop on Software Visualization, Evolution and Maintenance. São Carlos, Brazil, September 2018.