

Reading List

Computing Systems (CSys) Concentration

Before preparing for the exam, the students should inform the committee which three of the four topic areas listed below to be tested on.

- **Computer Architecture Technologies**

- Amadot T., F. Wilson, T. Rogers, General Purpose GPU Architectures, Synthesis Lectures in Computer Architecture, Morgan & Claypool, 2018.
- Goel P., B.C. Rosales, PODEM-X: An automatic test generation system for VLSI logic structures, *Proceedings of the 18th conference on Design automation*, 1981.
- Sze V., Y. Chen, T. Yang, J.S., Emer, How to evaluate deep neural network processors, TOPS/W (alone) considered harmful, *IEEE Solid-State Circuits Magazine*, 2020.
- Ge Q., Y. Yarom, D. Cock, G. Heiser, A survey of microarchitectural timing attacks and countermeasures on contemporary hardware, *Journal of Cryptographic Engineering*, 2018.

- **Network Technologies**

- Scazzoli D., M. Magarini, G. Verticale, Redundancy and synchronization management in mission- and time-critical wireless sensor networks, *Harnessing Knowledge, Innovation and Competence in Engineering of Mission Critical Systems*, Book chapter, Editor: Ali G. Hessami, 2020.
- Shi W., J. Cao, Q. Zhang, Y. Li, L. Xu, Edge computing: Vision and challenges, *IEEE Internet of Things journal*, 2016.
- Feamster N., J. Rexford, E. Zegura, The road to SDN: An intellectual history of programmable networks, *ACM SIGCOMM Computer Communication Review*, 44(2), pp. 87-98, 2014.
- Ali O., M.K. Ishak, M.K.L. Bhatti, Emerging IoT domains, current standings and open research challenges: a review, *PeerJ Computer Science*, 2021.

- **Security/Dependability**

- Venkatesha S., R. Parthasarathi, A survey of fault mitigation techniques for multi-core architecture, *Computer Research Repositories (CoRR)*, 2021.
- Safari S., M. Ansari, H. Khdr, P. Gohari-Nasari, S. Yari-Karin, A. Yeganeh-Khaksar, S. Hessabi, A. Ejlali, J. Kehnke, A survey of fault-tolerance techniques for embedded systems from the perspective of power, energy, and thermal issues, *IEEEAccess*, Vol. 10, 2022.
- Rieffle E., W. Polak, An Introduction to Quantum Computing for Non-Physicists, *ACM Computing Surveys*, 32(3), 2000.

- Bhamare D., M. Zolanvari, A. Erbad, R. Jain, K. Khan, N. Meskin, [Cybersecurity for industrial control systems: A survey](#), *Computers & Security*, Vol. 89, 2020.

- **Distributed and Intelligent Systems**

- Stoica I., R. Morris, D. Liben-Nowell, D.R. Karger, M.F. Kaashoek, F. Dabek, H. Balakrishnan, [Chord: A scalable peer-to-peer lookup protocol for internet applications](#), *IEEE/ACM Transactions on Networking*, 2003.
- Liu Y., Y. Peng, B. Wang, S. Yao, Z. Liu, [Review on cyber-physical systems](#), *IEEE/CAA Journal of Automatica Sinica*, 4(1), pp.27-40, 2017.
- Abadi M., P. Barham, J. Chen, Z. Chen, A. Davis, Et. al, [TensorFlow: A system for large-scale machine learning](#), *12th USENIX Symposium on Operating Systems Design and Implementation (OSDI)*, pp. 265-283, Nov 2016
- Calvaresi D, Y.D. CidD, M. Marinoni, A.F. Dragoni, A. Najjar, M. Schumacher, [Real-time multi-agent systems: Rationality, formal model, and empirical results](#), *Autonomous Agents and Multi-Agent Systems*. 35 (1), 2021.