ELE523E Computational Nanoelectronics, Fall 2016

Presentation Rules and Topics

RULES:

- Each student makes his/her presentation in **25** minute time span, **20** minutes for the presentation and **5** minutes for the questions/comments.
- Presentation topics and corresponding papers are listed below. The presentations should be mainly constructed on the listed papers; however it is encouraged to use/refer other papers and sources.
- Students should decide their presentation during the lecture time on **12/12/2016**.
- All students, not just the presenter, are expected to read the related papers before presentations. Students are expected to ask (tough☺) questions to the presenter.
- Students are graded considering the presentation **clarity/quality** and also the presenter's **knowledge** on the topic.

W14 (19/12/2016) TOPICS:

- **W14-P1, Furkan TEKE, Reversible Quantum Circuit Design:** Maslov, D., Dueck, G. W., & Miller, D. M. (2005). Toffoli network synthesis with templates. *Computer-Aided Design of Integrated Circuits and Systems, IEEE Transactions on*, *24*(6), 807-817.
- **W14-P2, Aykut BÜKER, Reversible Quantum Circuit Design:** Soeken, M., Wille, R., Hilken, C., Przigoda, N., & Drechsler, R. (2012, January). Synthesis of reversible circuits with minimal lines for large functions. In Design Automation Conference (ASP-DAC), 2012 17th Asia and South Pacific (pp. 85-92). IEEE.
- **W14-P3, Alper KULE, Nanoarray based Computing:** DeHon, A. (2003). Array-based architecture for FET-based, nanoscale electronics. *Nanotechnology, IEEE Transactions on*, *2*(1), 23-32.
- **W14-P4, Nihat ÇİÇEK, Nanoarray based Computing:** Strukov, D. B., & Likharev, K. K. (2012). Reconfigurable nano-crossbar architectures. *Nanoelectronics, R. Waser, Eds*.
- **W14-P5, Mohammadreza NOJEHDEH, Stochastic Computing:** Chen, H., & Han, J. (2010, May). Stochastic computational models for accurate reliability evaluation of logic circuits. In *Proceedings of the 20th symposium on Great lakes symposium on VLSI* (pp. 61-66). ACM.
- **W14-P6, Sait ALTUNER, Stochastic Computing:** Alaghi, A., & Hayes, J. P. (2013, October). Exploiting correlation in stochastic circuit design. In 2013 IEEE 31st International Conference on Computer Design (ICCD) (pp. 39-46). IEEE.

W15 (26/12/2015) TOPICS:

- **W15-P1, Ensar VAHAPOĞLU, Approximate Computing:** Han, J., & Orshansky, M. (2013, May). Approximate computing: An emerging paradigm for energy-efficient design. In Test Symposium (ETS), 2013 18th IEEE European (pp. 1-6). IEEE.
- **W15-P2, Sercan AYGÜN, Approximate Computing:** Gupta, V., Mohapatra, D., Park, S. P., Raghunathan, A., & Roy, K. (2011, August). IMPACT: imprecise adders for low-power approximate computing. In Proceedings of the 17th IEEE/ACM international symposium on Low-power electronics and design (pp. 409-414). IEEE Press.
- **W15-P3, Fırat KULA, Approximate Computing:** Venkatesan, R., Agarwal, A., Roy, K., & Raghunathan, A. (2011, November). MACACO: Modeling and analysis of circuits for approximate computing. In Proceedings of the International Conference on Computer-Aided Design (pp. 667-673). IEEE Press.
- **W15-P4, Seyfettin ÖKSÜZ, Fault Tolerance for Nanoarrays:** Hogg, T., & Snider, G. (2008). Defect-tolerant logic with nanoscale crossbar circuits. In *Emerging Nanotechnologies* (pp. 5-32). Springer US.
- **W15-P5, Burak KARADENİZ, Fault Tolerance for Nanoarrays:** Tunali, O., & Altun, M. Permanent and Transient Fault Tolerance for Reconfigurable Nano-Crossbar Arrays. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems.