

# E0 202: Automated Software Engineering with Machine Learning (Jan-Apr 2018)

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## List of topics and papers

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### [Event-based concurrency]

1. P. Maiya, A. Kanade, R. Majumdar, "Race detection for Android applications", PLDI 2014.
  2. P. Bielik, V. Raychev, M. Vechev, "Scalable race detection for Android applications", OOPSLA 2015.
  3. P. Maiya, A. Kanade, "Efficient computation of happens-before relation for event-driven programs", ISSTA 2017.
  4. A. Santhiar, S. Kaleeswaran, A. Kanade, "Efficient race detection in the presence of programmatic event loops", ISSTA 2016.
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### [Statistical language models for source code]

1. M. Gabel, Z. Su, "A study of uniqueness of source code", FSE 2010.
  2. A. Hindle, E. Barr, M. Gabel, Z. Su, P. Devanbu, "On the naturalness of software", ICSE 2012.
  3. T.T. Nguyen, A.T. Nguyen, H.A. Nguyen, T.N. Nguyen, "A statistical semantic language model of source code", FSE 2013.
  4. Z. Tu, Z. Su, P. Devanbu, "On the localness of software", FSE 2014.
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### [Android security]

1. S. Arzt, S. Rasthofer, C. Fritz, E. Bodden, A. Bartel, J. Klein, Y.L. Traon, D. Octeau, P. McDaniel, "FlowDroid: Precise context, flow, field object-sensitive and lifecycle aware taint analysis for Android apps", PLDI 2014.
  2. S. Arzt, S. Rasthofer, C. Fritz, E. Bodden, A. Bartel, J. Klein, Y.L. Traon, D. Octeau, P. McDaniel, "Highly precise taint analysis for Android applications", Tech. Report, 2013.
  3. [Background paper] Thomas Reps, Susan Horwitz, and Mooly Sagiv, "Precise interprocedural dataflow analysis via graph reachability", POPL 1995.
  4. Li Li, Alexandre Bartel, Tegawende F. Bissyande, Jacques Klein, Yves Le Traon, Steven Arzt, Siegfried Rasthofer, Eric Bodden, Damien Octeau, Patrick McDaniel, "lccTA: Detecting Inter-Component Privacy Leaks in Android Apps", ICSE 2015.
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[Deep learning for programs]

1. L. Mou, G. Li, Y. Liu, H. Peng, Z. Jin, Y. Xu, L. Zhang, "Building program vector representations for deep learning", [KSEC, 2015].
  2. Rahul Gupta, Soham Pal, Aditya Kanade, Shirish Shevade, "DeepFix: Fixing Common C Language Errors by Deep Learning", AAAI 2017.
  3. L. Mou, G. Li, L. Zhang, Tao Wang, Z. Jin, "Convolutional neural networks over tree structures for programming language processing", AAAI 2016.
  4. Miltiadis Allamanis, Daniel Tarlow, Andrew D. Gordon, Yi Wei, "Bimodal Modelling of Source Code and Natural Language", ICML 2015.
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