

R244: Paper Review Presentation Assignment

2023/10/18 Session 2: Data flow programming (15 mins presentation)

fjr38 (Felix) 5. Derek Murray, Malte Schwarzkopf, Christopher Snowton, Steven Smith, Anil Madhavapeddy and Steven Hand: [Ciel: a universal execution engine for distributed data-flow computing](#), NSDI 2011.

dv323 (Daniel) 6.2. D. Murray, F. McSherry, R. Isaacs, M. Isard, et al.: [Naiad: A Timely Dataflow System](#), SOSP, 2013. You can also read 6.1 and 6.3 if you can.

mm2504 (Michal) 10. Y. Yu et al.: [Dynamic Control Flow in Large-Scale Machine Learning](#), EuroSys, 2017. You can also read 8 and 8.2 if you can.

lrw45 (Lauren) 12. M. Schaarschmidt, S. Mika, et al.: [RLgraph: Flexible Computation Graphs for Deep Reinforcement Learning](#), SysML, 2019.

bt393 (Balázs) 16. P. Barham, et al.: [Pathways: Asynchronous Distributed Dataflow for ML](#), MLSys, 2022.

2023/10/25 Session 3: Large-scale graph data processing (14 mins presentation)

ksw39(Kim) 1. G. Malewicz, M. Austern, A. Bik, J. Dehnert, I. Horn, N. Leiser, and G. Czajkowski: [Pregel: A System for Large-Scale Graph Processing](#), SIGMOD, 2010.

gfw27(Grant) 4. J. Gonzalez, Y. Low, H. Gu, D. Bickson, and C. Guestrin: [Powergraph: distributed graph-parallel computation on natural graphs](#), OSDI, 2012.

sm2731(Stefan) 5. J. Shun and G. Blelloch: [Ligra: A Lightweight Graph Processing Framework for Shared Memory](#), PPOPP, 2013.

pt442(Pranav) 9. A. Roy, I. Mihailovic, W. Zwaenepoel: [X-Stream: Edge-Centric Graph Processing using Streaming Partitions](#), SOSP, 2013.

xt20(Thomas) 19. Z. Jia, Y. Kwon, G. Shipman, P. McCormick, M. Erez, A. Aiken: [A Distributed Multi-GPU System for Fast Graph Processing](#), VLDB, 2018.

wl446(Wenxuan) 14. S. Hong, H. Chafi, E. Sedlar, f K.Olukotun: [Green-Marl: A DSL for Easy and Efficient Graph Analysis](#), ASPLOS, 2012.

2023/11/01 Session 4: Probabilistic Programming (13 mins presentation)

jg2123(Jiahao) 7. V. Dalibard, M. Schaarschmidt, and E. Yoneki: [BOAT: Building Auto-Tuners with Structured Bayesian Optimization](#), WWW, 2017.

ql309(Qianyi) 14. J. Shao, et al.: [Tensor Program Optimization with Probabilistic Programs](#), ArXiv, 2022.

pmms2(Pedro) 20. Z. Wang, C. Li, S. Jegelka, and P. Kohli: [Batched High-dimensional Bayesian Optimization via Structural Kernel Learning](#), PLMR, 2017.

2023/11/05 Session 6: Optimisation in ML Compiler (13 mins presentation)

pt442(Pranav) 11. Z. Jia, O. Padon, J. Thomas, T. Warszawski, M. Zaharia, A. Aiken: [TASO: Optimizing Deep Learning Computation with Automated Generation of Graph Substitutions](#): SOSP, 2019.

ksw39(Kim) 22. Y. Zhou, et al.: [Transferable Graph Optimizers for ML Compilers](#), NEURIPS, 2020.

gfw27(Grant) 14. Y. Yang, et al.: [Equality Saturation for Tensor Graph Superoptimization](#), MLSys, 2021.

sm2731(Stefan) 4. Zheng, L. et al.: [EinNet: Optimizing Tensor Programs with Derivation-Based Transformations](#), OSDI, 2023.

fjr38(Felix) 18. L. Zheng, et al.: [Ansor : Generating High-Performance Tensor Programs for Deep Learning](#), OSDI, 2020.

Paper 8 [TVM: An Automated End-to-End Optimizing Compiler for Deep Learning](#) and **Paper 9** [TVM: End-to-End Compilation Stack for Deep Learning](#) are also TVM papers, which are Ansor paper is an evolution of them. Thus, probably they need to be understood.

xyt20(Thomas) 21. J. Turner, et al.: [Neural Architecture Search as Program Transformation Exploration](#), ASPLOS, 2021.

2023/11/22 Session 7: Optimisation in Computer Systems (13 mins presentation)

bt393(Balázs) 1.1. A. Mirhoseini et al.: [Device Placement Optimization with Reinforcement Learning](#), ICML, 2017.

...plus **1.2.** A. Mirhoseini, A. Goldie et al.: [A Hierarchical Mode for Device Placement](#), ICLR, 2018.

ql309(Qianyi) 3. R. Addanki, S. B. Venkatakrishnan, S. Gupta, H. Mao, M. Alizadeh: [Placeto: Learning Generalizable Device Placement Algorithms for Distributed Machine Learning](#), arXiv, 2019.

wl446(Wenxuan) 12. D. Aken, D. Yang, S. Brillard, A. Fiorino, B. Zhang, C. Bilien, and A. Pavlo: [An Inquiry into Machine Learning-based Automatic Configuration Tuning Services on Real-World Database Management Systems](#), VLDB, 2021.

This paper is based on 10 [Automatic database management system tuning through large-scale machine learning](#).

jg2123(Jiahao) 9. G. Li, X. Zhou, S. Li, and B. Gao: [Qtune: RL for DB query optimisation](#), VLDB, 2019.

lrw45(Lauren) 20. R. Marcus, P. Negi, H. Mao, N. Tatbul, M. Alizadeh, and T. Kraska: [Bao: Learning to Steer Query Optimizers](#), VLDB, 2020.

pmms2(Pedro) 34. J. Xing, et al.: [Bolt: Bridging the Gap between Auto-tuners and Hardware-native Performance](#), MLSYS, 2022.