

Yao Lu

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My interests are artificial intelligence, machine learning and vision. Of late, I am working on the intersection of ML and systems to build big-data platforms for large-scale machine learning, as well as using machine learning to optimize existing data parallel systems.

Educations

- 2013 – Now PhD candidate in CSE, **University of Washington**.
Research area: AI + big-data systems. Advised by Prof. Linda Shapiro.
- 2010 – 2013 MSc in CS, **Fudan University**, Shanghai, China.
Research area: Vision and multimedia.
- 2006 – 2010 BSc in CS, **Tongji University**, Shanghai, China.

Internships

- 2017.6 – 2017.9 **Microsoft Research**, Redmond, WA, USA Research Intern
Investigate deep-neural-network-based algorithms to accelerate generic query processing for Microsoft SQL Server. Mentored by Christian Konig and Srikanth Kandula @ Data Management, Exploration and Mining Group.
- 2016.9 – 2016.11 **Microsoft Research Asia**, Beijing, China Research Intern
Develop algorithms to accelerate machine learning queries on the Microsoft Cosmos big-data platform. Mentored by Srikanth Kandula and Kun Tan @ Wireless and Networking Research Group.
- 2016.6 – 2016.9 **Microsoft Research**, Redmond, WA, USA Research Intern
Multiple object tracking and detection (Tensorflow, Darknet) with recurrent neural networks. Mentored by Matthai Philipose @ Mobile and Networking Research Group.
- 2015.4 – 2016.6 **Microsoft Research**, Redmond, WA, USA Research Intern
Develop algorithms and systems for large-scale traffic surveillance video analytics on the Microsoft Cosmos big-data platform. Mentored by Aakanksha Chowdhery and Srikanth Kandula @ Mobile and Networking Research Group.
- 2014.6 – 2014.9 **Adobe Research**, Seattle WA, USA Research Intern
Build algorithms for interactive video object segmentation. Mentored by Jue Wang and Xue Bai @ Creative Technology Lab; project shipped to Adobe After Effects.
- 2009.9 – 2010.3 **Microsoft MSN China**, Shanghai, China. SDE Intern
Build data systems using C#, SQL.

Publications

- Y. Lu, A. Chowdhery, S. Kandula and S. Chaudhuri. Accelerating Machine Learning Inference with Probabilistic Predicate. ACM International Conference on Management of Data (**SIGMOD**). Houston, TX, USA. 2018.
- Y. Lu, S. Kandula and S. Chaudhuri. Interactive Demonstration of Probabilistic Predicates. ACM International Conference on Management of Data (**SIGMOD**) Demo. Houston, TX, USA. 2018. **Best Demonstration Award.**
- H. Qiu, Y. Zheng, H. Ye, Y. Lu, F. Wang, L. He. Precise Temporal Action Localization by Evolving Temporal Proposals. ACM International Conference on Multimedia Retrieval (**ICMR**). Yokohama, Japan. 2018.
- S. Lyu, M. Chang, D. Du, L. Wen, H. Qi, Y. Li, Y. Wei, L. Ke, T. Hu, M. Del Coco, P. Carcagni, D. Anisimov, E. Bochinski, F. Galasso, F. Bunyak, G. Han, H. Ye, H. Wang, K. Palaniappan, K. Ozcan, L. Wang, L. Wang, M. Lauer, N. Watcharapinchai, N. Song, N. Al-Shakarji, S. Wang, S. Amin, S. Rujikietgumjorn, T. Khanova, T. Sikora, T. Kutschbach, V. Eiselein, W. Tian, X. Xue, X. Yu, Y. Lu, Y. Zheng, Y. Huang, Y. Zhang. UA-DETRAC 2017: Report of AVSS2017 & IWT4S Challenge on Advanced Traffic Monitoring. IEEE International Conference on Advanced Video and Signal Based Surveillance (**AVSS**). Lecce, Italy. 2017.
- Y. Peng, H. Ye, Y. Lin, Y. Bao, Z. Zhao, H. Qiu, Y. Lu, L. Wang, Y. Zheng. Large-Scale Video Classification with Elastic Streaming Sequential Data Processing System. ACM Multimedia Workshop on Large-Scale Video Classification Challenge (**LSVC**). Mountain View, USA. 2017.
- L. Wang, Y. Lu, H. Wang, Y. Zheng, H. Ye and X. Xue. Evolving Boxes for Fast Vehicle Detection. IEEE International Conference on Multimedia and Expo (**ICME**). Hongkong, China. 2017. **Platinum Best Paper Award.**
- Y. Lu and L. Shapiro. Closing the Loop for Object Proposals and Edge Detection. The Thirty-First AAAI Conference on Artificial Intelligence (**AAAI**). San Francisco, CA, USA. 2017.
- Y. Lu, X. Bai, L. Shapiro, J. Wang. Coherent Parametric Contours for Interactive Video Object Segmentation. IEEE International Conference on Computer Vision and Pattern Recognition (**CVPR**). Las Vegas, USA. 2016.
- Y. Lu, A. Chowdhery, S. Kandula. Optasia: A Relational Platform for Efficient Large-Scale Video Analytics. ACM Symposium on Cloud Computing (**SOCC**). Santa Clara, CA, USA. 2016.
- Y. Lu, W. Zhang, K. Zhang, X. Xue. Semantic Context Learning with Large-Scale Weakly-Labeled Image Set. ACM Conference on Information and Knowledge Management (**CIKM**). Hawaii, HI, USA, 2012.
- Y. Lu, W. Zhang, C. Jin, X. Xue. Learning Attention Map from Images. IEEE International Conference on Computer Vision and Pattern Recognition (**CVPR**). Providence, RI, USA. 2012.
- W. Zhang, Y. Lu, X. Xue, J. Fan. Automatic Image Annotation with Weakly Labeled Datasets. **ACM Multimedia**. Scottsdale, AZ, USA. 2011.
- X. Xue, W. Zhang, J. Zhang, B. Wu, J. Fan, Y. Lu. Correlative Multi-Label Multi-Instance Image Annotation. 13th International Conference on Computer Vision (**ICCV**). Barcelona, Spain. 2011.
- Y. Lu, W. Zhang, H. Lu, X. Xue. Salient Object Detection using Concavity Context. 13th IEEE International Conference on Computer Vision (**ICCV**). Barcelona, Spain. 2011.

- Y. Chen, Y. Lu, P. Lu. Fast Computation of Grobner Bases of Ideals of $F[x,y]$. IEEE International Symposium on Information Theory (**ISIT**). Seoul, Korea. 2009.

Selected Awards

- 2018 ACM SIGMOD Best Demonstration Award
- 2017 IEEE ICME Platinum Best Paper Award
- 2014 University of Washington Royalty Research Fund Scholarship
- 2012 Chinese National Graduate Scholarship
- 2012 Google Innovation Scholarship
- 2011 Tencent Scholarship

Teaching

- Teaching assistant @ Fudan COMP120004 Linear Algebra, 2011 Spring.
- Teaching assistant @ UW CSE415 Introduction to AI, 2014 Spring.
- Teaching assistant @ UW CSE455 Computer Vision, 2016 Winter, 2017 Winter, 2018 Spring.
- Teaching assistant @ UW CSE547 Machine Learning and Big Data, 2016 Spring.
- Teaching assistant @ UW CSE576 Computer Vision, 2017 Spring.
- Teaching assistant @ UW CSE546 Machine Learning, 2018 Autumn.
- Teaching assistant @ UW CSE515 Statistical Methods in Computer Science, 2018 Winter.
- Teaching assistant @ UW CSE344 Introduction to Data Management, 2018 Summer.

Skills

C/C++, C#, Python, Rust, Keras, PyTorch, Darknet, MS Cosmos, Azure ADL.