

Junfeng Pan

CONTACT INFORMATION

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BRIEF BIO

In Facebook, Junfeng designed, built, led and grew large-scale machine learning and serving systems for ads ranking and quality from its day one, optimizing multi-billion dollar business. Boosted annual ads revenue from hundreds of millions to billions. Boosted user growth on the journey of hitting 1 billion daily active people and 1.5 billion monthly active people. Represented Facebook and gave invited speech in many events and conferences.

In Google, he focused on online advertising algorithms and systems for improving ads quality and coverage, including keyword relevance, ranking, pattern extraction, suggestion, pCTR, etc. Boosted revenue by tens of millions of dollars per year. He won Google's prestigious all-company OC Award (a.k.a EMG Award) 2010 for his contribution, impact and innovation in AdWords Quality.

He has many papers published in top-tier conferences and journals such as TOIS, TKDE, ACM SIGKDD, AAAI and IJCAI. He serves as a co-chair/session chair for several conferences and workshops such as NIPS, AAAI and IJCAI. He is a (senior) program committee member for nearly 30 research conferences such as ACM KDD, IJCAI, AAAI and WSDM. He also serves as a regular reviewer for 10+ journals in ACM, IEEE and others.

Junfeng was the world champion of ACM Knowledge Discovery and Data Mining (KDD) Cup 2005 on all the three awards: Precision, Performance and Creativity Awards. Junfeng was in a featured interview in the magazine *American Scientist*.

WORK EXPERIENCE **Engineering Manager M2 / Scientist E7, Facebook, Palo Alto** Jan. 2011 - Current

- Designed, built and led and grew large-scale machine learning and serving systems for ads ranking from its day one, optimizing for multi-billion dollar business. I am proud of it.
- Boosted annual ads revenue from hundreds of millions to billions via dedicated machine learnings and others.
- Led a team on ads data and model engineering, building large scale systems and scaling them up hundreds of times for handling trillions of records, billions of impressions, millions of clicks and conversions per day. huge impact on user experience and ads revenue.
- Defined team goals and roadmaps with good execution. Delivered strong results via cross-team collaboration and a series of critical decision makings.
- Hired and mentored team members and made them motivated, successful and high productive.
- Hired and led a team on user growth optimization. Boosted user growth on the journey of hitting 1 billion daily active people and 1.5 billion monthly active people.
- Extended scope and influence on user acquisition, engagement, creating selling opportunity and revenue optimization.
- Represented Facebook and gave invited speech in many events and conferences.

Software Engineer, Google, Mountain View Dec. 2007 - Dec. 2010

- Led a series of projects in sponsored search (AdWords) for improving ads quality and coverage, including keyword relevance, suggestion, ranking, predicted click through rate models, etc. Boosted revenue by tens of millions of dollars per year.
- 2010 Google's prestigious OC Award for my contribution to AdWords Quality.
- 2010 Google Peer Bonus Award from Expanded Match Team for my contribution to pattern discovery and the application in keyword classification.
- 2010 Google Peer Bonus Award from Expanded Match Team for my contribution to query en-

- richment and the application in keyword matching.
- 2010 Google Peer Bonus Award from UI Experience Research Team for my contribution to user intent understanding with machine learning.
 - 2010 Google Peer Bonus Award from Google Search Team for my contribution to web-based information extraction framework.

Engineering Intern, Google, New York City Jun. 2006 - Nov. 2006

- Learning-based information extraction systems and models.

HONORS AND AWARDS

Featured Interview in the magazine *American Scientist* Sep/Oct 2013, Vol. 101 Issue 5.

Google's prestigious OC Award (a.k.a EMG Award) 2010 for my contribution to AdWords Quality.

World Champion of the 2005 ACM Knowledge Discovery and Data Mining (KDD) Cup on:

- Precision Award
- Performance Award
- Creativity Award

Query classification has very wide applications such as interest-based ads targeting by analyzing query log. The proposed solution won the championship worldwide. The performance was far better than the runners-up, and was close to the performance of human experts in both precision and recall. The work was reported in professional media and has been widely studied and applied.

Several other prizes and honors nationwide.

EDUCATION

Hong Kong University of Science and Technology (HKUST) Hong Kong

Ph.D. Major in Computer Science and Engineering 2004-2007

Fulfill Partial credits in Shanghai Jiao Tong University 2003-2004

Massachusetts Institute of Technology (MIT) Boston

Visiting Scholar. Learning-based User Behavior Recognition. 2007-2007

Zhongshan (Sun Yat-sen) University (ZSU) China

Bachelor of Science. Major in Computer Science. Ranked top %1. 1999-2003

Excellent Graduate Award, 2003.

Excellent Student Scholarship, 2000, 2001, 2002.

Excellent New Student Award, 1999.

PUBLICATIONS

Jeffrey J. Pan, Xinran He, Ou Jin, Tianbing Xu, Bo Liu, Tao Xu, Yanxin Shi, Antoine Atallah, Ralf Herbrich, Stuart Bowers, Joaquin Quinonero Candela. Practical Lessons from Predicting Clicks on Ads at Facebook. International Workshop on Data Mining for Online Advertising (ADKDD). August, 2014.

Jeffrey J. Pan, Sinno Jialin Pan, Jie Yin, Lionel Ni, and Qiang Yang. Tracking Mobile Users in Wireless Networks via Semi-Supervised Co-Localization. IEEE Transactions on Pattern Analysis and Machine Intelligence. March, 2012.

Jeffrey J. Pan, Seth Teller, Qiang Yang. Semi-Supervised Localization via Action Respecting Manifold. The International Joint Conference on Artificial Intelligence (IJCAI) Workshop on Intelligent Systems for Assisted Cognition. Pasadena, CA. July, 2009.

Vincent W. Zheng, Sinno J. Pan, Qiang Yang and **Jeffrey J. Pan**. Transferring Multi-device Localization Models using Latent Multi-task Learning. In Proceedings of the 23rd AAAI Conference

on Artificial Intelligence (AAAI-08). Chicago, Illinois, USA. July 2008.

Jie Yin, Qiang Yang and **Jeffrey J. Pan**. Sensor-Based Abnormal Human-Activity Detection for Security Monitoring. Special Issue on Intelligence and Security Informatics, *IEEE Transactions on Knowledge and Data Engineering (TKDE)*. Vol 20, No. 8, August 2008.

Jeffrey J. Pan, Sinno J. Pan, Vincent W. Zheng and Qiang Yang. Digital Wall: A Power-efficient Solution for Location-based Data Sharing. In *Proceeding of PerCom-08 Workshop on Power-Aware Pervasive Devices (PerDev-08)*, Hong Kong. March 17-21, 2008.

Jeffrey J. Pan, Qiang Yang, Yiming Yang, Lei Li, Francis T. Li and George W. Li. Cost-Sensitive-Data Preprocessing for Mining Customer Relationship Management Databases. *IEEE Intelligent Systems*. (Vol. 22, No. 1). Pages 46-51. January/February 2007.

Jeffrey J. Pan, Qiang Yang, Jialin Pan. Online Co-Localization in Indoor Wireless Networks. In *Proceedings of the 22nd National Conference on Artificial Intelligence (AAAI-07)*. Vancouver, Canada. July 2007.

Jeffrey J. Pan, Qiang Yang. Co-Localization from Labeled and Unlabeled Data Using Graph Laplacian. In *Proceedings of the Twentieth International Joint Conference on Artificial Intelligence (IJCAI-07)*. Hyderabad, India. Pages 2166-2171. January 2007.

Rong Pan, Junhui Zhao, Wenchen Zheng, **Jeffrey J. Pan**, Dou Shen, Jialin Pan, and Qiang Yang. Domain-Constrained Semi-Supervised Mining of Tracking Models in Sensor Networks. *ACM SIGKDD*. San Jose, USA. August 2007.

Jialin Pan, James T. Kwok, Qiang Yang, **Jeffrey J. Pan**. Adaptive Localization in a Dynamic WiFi Environment Through Multi-view Learning. In *Proceedings of the 22nd National Conference on Artificial Intelligence (AAAI-07)*. Vancouver, Canada. July 2007.

Jeffrey J. Pan, Qiang Yang, Hong Chang, Dit-Yan Yeung. A Manifold Regularization Approach to Calibration Reduction for Sensor-Network Based Tracking. In *Proceedings of the Twenty-First National Conference on Artificial Intelligence (AAAI-06)*. Pages 988-993. Boston, USA. July 2006.

Jeffrey J. Pan, James T. Kwok, Qiang Yang, Yiqiang Chen. Multidimensional Vector Regression for Accurate and Low-Cost Location Estimation in Pervasive Computing. *IEEE Transactions on Knowledge and Data Engineering (TKDE)*. Pages 1181-1193. Vol 18, No. 9, September 2006.

Ivor W. Tsang, James T. Kwok, Brian Mak, Kai Zhang, **Jeffrey J. Pan**. Fast speaker adaptation via maximum penalized likelihood kernel regression. In *Proceedings of the International Conference on Acoustics, Speech, and Signal Processing (ICASSP-06)*. Toulouse, France. May 2006

Dou Shen, Rong Pan, Jian-Tao Sun, **Jeffrey J. Pan**, Kangheng Wu, Jie Yin and Qiang Yang. Query Enrichment for Web-query Classification. *ACM Transactions on Information Systems (TOIS)*. Pages 1-33. Vol. 24, No. 3, July 2006.

Jeffrey J. Pan, James T. Kwok, Qiang Yang, Yiqiang Chen. Accurate and low-cost location estimation using kernels. In *Proceedings of the Nineteenth International Joint Conference on Artificial Intelligence (IJCAI-05)*. Edinburgh, United Kingdom. Pages 1366-1371. July 2005.

Dou Shen, Rong Pan, Jian-Tao Sun, **Jeffrey J. Pan**, Kangheng Wu, Jie Yin and Qiang Yang. Q2C@UST: Our Winning Solution to Query Classification in KDD Cup 2005. *SIGKDD Explorations*. Page 100-110. Volume 7, Issue 2, December 2005.

Rong Pan, Qiang Yang, **Jeffrey J. Pan**, Lei Li. Competence-driven case-based mining. In *Proceedings of the Twentieth National Conference on Artificial Intelligence (AAAI-05)*. Pittsburgh, Pennsylvania, USA. Pages 228-233. July 2005.

Junbiao Pan , **Jeffrey J. Pan**. The Principal and Improvement of Hot Fix for S12-Switch. *Science and Research of Telecommunications*. Pages 56-64, Vol.7, No.2. June 2003.

Jiancong Bai , **Jeffrey J. Pan** and Jianbo Luo. Programming in PHP. China Machine Press, ISBN-7111-08596-5, January 2001.

SELECTED
PROFESSIONAL
ACTIVITIES

Chair

- 2015 Host Keynote Speech at the 21st ACM SIGKDD Conference on Knowledge Discovery and Data Mining
- 2015 Session Chair on “Social Network” of the 24th International Joint Conference on Artificial Intelligence (IJCAI)
- 2010 Session Chair on “Physically Grounded AI: Human Behaviors” of the 24th Conference on Artificial Intelligence (AAAI)
- 2010 Session Chair on “Physically Grounded AI: Behavior Modeling” of the 24th Conference on Artificial Intelligence (AAAI)
- 2009 Session Chair on “Unsupervised Learning” of the the 21st International Joint Conference on Artificial Intelligence (IJCAI)
- 2009 Session Chair on “Dimensionality Reduction” of the the 21st International Joint Conference on Artificial Intelligence (IJCAI)
- 2008 Session Chair on “Activity Recognition” of the 23rd Conference on Artificial Intelligence
- 2008 Session Chair on “Model Transfer” of the 23rd Conference on Artificial Intelligence (AAAI)
- 2008 Co-Organizer of Workshop on Beyond Search: Computational Intelligence for the Web, Neural Information Processing Systems (NIPS)

Program Committee member

- 2016 Senior Program Committee member of the 22nd ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)
- 2015 Program Committee member of WWW workshop on TargetAd
- 2013 Program Committee member of IEEE International Conference on Big Data
- 2012 Program Committee member of the 5th Annual International Workshop on Data Mining and Audience Intelligence for Advertising (ADKDD/KDD)
- 2012 Program Committee member of the Multimedia Data Mining Workshop (MDM/KDD)
- 2012 Program Committee member of the 5th ACM International Conference on Web Search and Data Mining (WSDM)
- 2011 Program Committee member of the 5th Workshop on Social Network Mining and Analysis (SNA-KDD)
- 2011 Senior Program Committee member of the 22nd International Joint Conference on Artificial Intelligence (IJCAI)
- 2011 Program Committee member of the 25th AAAI Conference on Artificial Intelligence (AAAI)
- 2011 Program Committee member of the 4th ACM International Conference on Web Search and Data Mining (WSDM)
- 2011 Program Committee member of the IEEE/WIC/ACM International Conference on Web Intelligence (WI)
- 2011 Program Committee member of the 3rd Asian Conference on Machine Learning (ACML)
- 2010 Program Committee member of the 16th annual ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)
- 2010 Program Committee member of the 24th AAAI Conference on Artificial Intelligence (AAAI)
- 2010 Program Committee member of the 3rd ACM International Conference on Web Search and Data Mining (WSDM)
- 2010 Program Committee member of the 3rd International Conference on Advances in Computer-

Human Interaction (ACHI)

- 2010 Program Committee member of the IEEE/WIC/ACM International Conference on Web Intelligence (WI)
- 2010 Program Committee member of the 3rd Annual International Workshop on Data Mining and Audience Intelligence for Advertising (ADKDD)
- 2010 Program Committee member of the Multimedia Data Mining Workshop (MDM/KDD)
- 2010 Program Committee member of the 2nd Asian Conference on Machine Learning (ACML)
- 2009 Program Committee member of the European Conference on Machine Learning (ECML)
- 2009 Program Committee member of the Internal Joint Conference on Artificial Intelligence
- 2009 Program Committee member of the SIAM International Conference on Data Mining (SDM)
- 2009 Program Committee member of the 2nd ACM International Conference on Web Search and Data Mining (WSDM)
- 2009 Program Committee member of the 18th ACM Conference on Information and Knowledge Management (CIKM)
- 2009 Program Committee member of the IEEE/WIC/ACM International Conference on Web Intelligence (WI)
- 2009 Program Committee member of the International Conference on Data Mining (ICDM) Workshop on Transfer Mining.
- 2009 Program Committee member of the 1st Asian Conference on Machine Learning (ACML)
- 2009 Program Committee member of the International Conference on Web Information Systems and Mining (WISM)
- 2009 Program Committee member of the International Conference on Intelligent User Interfaces
- 2008 Program Committee member of the 23rd Conference on Artificial Intelligence (AAAI)
- 2008 Program Committee member of the 10th Pacific Rim International Conference on Artificial Intelligence (PRICAI)
- 2008 Program Committee member of the IEEE/WIC/ACM International Conference on Web Intelligence (WI)
- 2007 Program Committee member of the IEEE ICDM Data Mining Contest
- 2006 Program Committee member of the 1st IEEE International Workshop on Data Mining and Wireless Sensor Networks (DM-WSN)

Reviewer for Journals

- Reviewer for ACM Transactions on Intelligent Systems and Technology (ACM TIST)
- Reviewer for ACM Transactions on Knowledge Discovery from Data (TKDD)
- Reviewer for Communications of the ACM (CACM)
- Reviewer for IEEE Multimedia
- Reviewer for IEEE Transactions on Signal Processing
- Reviewer for IEEE Transaction on Knowledge Discovery and Data Engineering (TKDE)
- Reviewer for IEEE Transaction on Neural Networks (TNN)
- Reviewer for IEEE Transaction on Mobile Computing (TMC)
- Reviewer for IEEE Intelligent Systems

PROFESSIONAL MEMBERSHIPS

Senior Member of Institute of Electrical and Electronics Engineers (IEEE)
Member of Association for Computing Machinery (ACM)
Member of Association for the Advancement of Artificial Intelligence (AAAI)
Member of Sigma Xi