Alan Malek

Curriculum Vitae

Education and Academic Positions

2017-2018 **Postdoctoral Associate**, *Massachusetts Institute of Technology*, Cambridge, MA.
Supervisors: Ali Jadbabaie and Sasha Rakhlin

2009-2017 **Ph.D. Electrical Engineering and Computer Science**, *University of California*, Berkeley, CA.
Thesis Advisor: Peter Bartlett
Thesis: *Efficient Sequential Decision Making*

2009-2013 **M.A. Statistics**, *University of California*, Berkeley, CA.

2005-2009 **M.S. Electrical Engineering**, *Stanford University*, Palo Alto, CA.

2005-2009 **B.S. Mathematics**, *Stanford University*, Palo Alto, CA.
minor in Physics

Publications

- Yasin Abbasi-Yadkori, Peter L. Bartlett, Xi Chen, Alan Malek. **Large-Scale Markov Decision Problems via the Linear Programming Dual**. *arXiv:1901.01992 [math.OC]*, 2019.
- Alan Malek, Peter L. Bartlett. **Horizon-Independent Minimax Linear Regression**. In *Advances in Neural Information Processing Systems*, December 2018.
- Yasin Abbasi-Yadkori, Peter L. Bartlett, Victor Gabillon, Alan Malek, Michal Valko. **Best of Both Worlds: Stochastic and Adversarial Best-arm Identification**. In *Proceedings of The Conference on Learning Theory*, July 2018.
- Jason Altschuler, Victor-Emmanuel Brunel, Alan Malek. **Best Arm Identification for Contaminated Bandits**. *arXiv:1802.09514 [math.ST]*, 2018.
- Wojciech Kotłowski, Wouter Koolen, Alan Malek. **Random Permutation Online Isotonic Regression**. In *Advances in Neural Information Processing Systems*, December 2017.
- Alan Malek. **Efficient Sequential Decision Making**. *Doctoral dissertation, UC Berkeley*, 2017
- Alan Malek, Sumeet Katariya, Yinlam Chow, Mohammad Ghavamzadeh. **Sequential Multiple Hypothesis Testing with Type I Error Control**. In *Proceedings of the International Conference on Artificial Intelligence and Statistics*, April 2017.
- Yasin Abbasi-Yadkori, Alan Malek, Peter L. Bartlett, Victor Gabillon. **Hit-and-Run for Sampling and Planning in Non-Convex Spaces**. In *Proceedings of the International Conference on Artificial Intelligence and Statistics*, April 2017.

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- Wojciech Kotłowski, Wouter Koolen, Alan Malek. **Online Isotonic Regression**. In *Proceedings of the Conference on Learning Theory*, June 2016.
- Wouter Koolen, Alan Malek, Peter L. Bartlett, and Yasin Abbasi-Yadkori. **Minimax Time Series Prediction**. In *Advances in Neural Information Processing Systems*, December 2015.
- Peter L. Bartlett, Wouter Koolen, Alan Malek, Eiji Takimoto, Manfred Warmuth. **Minimax fixed-design linear regression**. In *Proceedings of the Conference on Learning Theory*, June 2015.
- Yasin Abbasi-Yadkori, Peter L. Bartlett Xi Chen, Alan Malek. **Large-scale Markov decision problems with KL control cost**. In *Proceedings of the International Conference on Machine Learning*, June 2015.
- Wouter Koolen, Alan Malek, Peter L. Bartlett. **Efficient minimax strategies for square loss games**. In *Advances in Neural Information Processing Systems*, December 2014.
- Yasin Abbasi-Yadkori, Peter L. Bartlett, and Alan Malek. **Linear programming for large-scale Markov decision problems**. In *Proceedings of the International Conference on Machine Learning*, July 2014.

Patent Applications

- Nikolaos Vlassis, Mohammad Ghavamzadeh, Alan Malek. **Testing an Effect of User Interaction with Digital Content in a Digital Medium Environment**. US Patent App. 15/269,003, 2018.
- Mohammad Ghavamzadeh, Alan Malek, Yinlam Chow, Sumeet Katariya. **Systems and Methods Associated with Sequential Multiple Hypothesis Testing**. US Patent App. 15/156,008, 2017.
- Mohammad Ghavamzadeh, Alan Malek, Yinlam Chow. **Sample Size Determination in Sequential Hypothesis Testing**.US Patent App. 15/148,390, 2017.

Talks

July 2016 **Minimax Strategies for Square Loss Games**, *Artificial Intelligence and Reinforcement Learning Seminar*, University of Alberta.

August 2016 **Minimax Strategies for Square Loss, Linear Regression, and Time-series Prediction**, *Machine Learning Seminar*, MIT.

April 2016 **Keynote**, *Harker Research Symposium*.

Teaching

Spring 2016 **CS281b/Stat241b TA**, *UC Berkeley*, Statistical Learning Theory II.
- Statistical risk bounds, minimax game theoretic algorithms, neural networks, kernel methods, ensemble methods
- Responsible for: homework and solutions, grading

Fall 2015 **CS281a/Stat241a TA**, *UC Berkeley*, Statistical Learning Theory.
- Graphical models, general inference, statistical estimation
- Responsible for: discussion section, homework and solutions, grading

Spring 2014 **CS281b/Stat241b TA**, *UC Berkeley*, Statistical Learning Theory II.
- Machine learning, Online prediction, kernel methods, boosting, etc.
- Responsible for: grading, office hours, homework solutions

Spring 2011 **EE20N TA**, *UC Berkeley*, Signals and Systems.
- Responsible for: weekly lab (using Labview), discussion sections, office hours

Spring 2011 **EE20N TA**, *UC Berkeley*, Signals and Systems.
- Responsible for: weekly lab (using Labview), discussion sections, office hours

Service

2014-2018 **Reviewer**, *NeurIPS (reviewer award 2017)*.

2017 **Reviewer**, *ICML (outstanding reviewer award)*.

2017 **PC member**, *AAAI*.

2016-2018 **Subreviewer**, *COLT*.

2016-2018 **Subreviewer**, *ALT*.

2015-2016 **AI/ML Admissions Committee**, *UC Berkeley EECS Department*.

2014-2015 **AI/ML Admissions Committee**, *UC Berkeley EECS Department*.

2015 **Student Laptop Committee**, *UC Berkeley EECS Department*.

2010-2011 **Social Chair**, *UC Berkeley EE Graduate Student Assembly*.

Fall 2008 - Spring 2009 **Stanford Ceramics Club**, *Founder, President, Studio Manager*.

Work Experience

May 2015 -January 2016 **Data Science Intern**, *Adobe Research*.
- Developed sequential hypothesis testing techniques with theoretical and empirical evaluations
- Extended work to multiple sequential hypothesis tests
- Two patents in submission

May 2014 - September 2014 **Data Science Intern**, *Upwork*.
- Modeled client potential value and intervention susceptibility
- Worked on algorithms to improve job/freelancer matching

June 2008 - September 2008 **Science Intern**, *Achor Intelligence*.
- Developed tools to identify click fraud in online advertisement data

June 2007 - September 2007 **Engineering Intern**, *Intuitive Surgical*.
- Simulated and optimized kinematics of prototype manipulator

June 2006 - September 2006 **Engineering Intern**, *Intuitive Surgical*.
- Built and tested electrical system for prototype product

Interests

- Rock Climbing (mostly trad)
- Competitive Powerlifting

- Cooking and Baking
- Photography