

IERG5330: Network Economics

Recommended Reading

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September 18, 2018

The following is a list of recommended readings for the course. The purpose of the list is to provide a starting point for students to examine existing theory and applications of network economics, and some inspirations of possible course projects. The lists are by no means exhaustive, and papers in the list are selected from many excellent papers in a semi-random fashion with a heavy personal bias, focusing on recent papers in high quality venues.

Students should form groups of **four**, and each group should pick a paper in the first category (recommended papers for in-class presentation) to present. The presentation schedule will be determined after the groups are formed and papers are picked.

Please email your names (of all group members) and the top three paper choices (in decreasing order of preferences) to TA Ms. Ming Tang (tangmingscu [at] gmail.com) by September 28, 2018 (Friday). Students who do not indicate preferences by September 28 will be randomly grouped and assigned papers. For details, see the course webpage at <http://jianwei.ie.cuhk.edu.hk/teaching/IERG5330Fall2018/index.html>.

References

[Recommended Papers for In-Class Presentation]

- [1] M. Hota and S. Kapoor. "Priority Based Wireless Multi-Network Selection Games," *ACM MobiHoc*, 2018.
- [2] X. Gong, and S. Ness. "Incentivizing Truthful Data Quality for Quality-Aware Mobile Data Crowdsourcing," *ACM MobiHoc*, 2018.
- [3] K. Han, *et al.* "Discount Allocation for Revenue Maximization in Online Social Networks," *ACM MobiHoc*, 2018.
- [4] A. Lu, P. Frazier, and O. Kislev, "Surge Pricing Moves Uber's Driver-Partners," *ACM EC*, 2018.
- [5] J. Hartline, *et al.*, "Fast Core Pricing for Rich Advertising Auctions," *ACM EC*, 2018.
- [6] P. Li, S. Sekar, and B. Zhang, "A Capacity-Price Game for Uncertain Renewables Resources." *ACM E-Energy*, 2018.

- [7] S. Wang and N. Shroff . “Security Game with Non-additive Utilities and Multiple Attacker Resources,” *ACM Sigmetrics*, 2017.
- [8] O. Schrijvers, J. Bonneau, D. Boneh, T. Roughgarden: “Incentive Compatibility of Bitcoin Mining Pool Reward Functions” *International Conference on Financial Cryptography and Data Security*, 2016.
- [9] K. Poularakis, G. Iosifidis, and L. Tassiulas. “Deploying carrier-grade Wi-Fi: offload traffic, not money,” *ACM MobiHoc*, 2016.
- [10] C. Hasan, M. K. Marina, and U. Challita. “On LTE-WiFi coexistence and inter-operator spectrum sharing in unlicensed bands: Altruism, cooperation and fairness,” *ACM MobiHoc*, 2016.
- [11] W. Wang, L. Ying, and J. Zhang. “The value of privacy: Strategic data subjects, incentive mechanisms and fundamental limits,” *ACM Sigmetrics*, 2016.
- [12] L. Zheng, C. Joe-Wang, M. Andrews, and M. Chiang, “Optimizing Data Plans: Usage Dynamics in Mobile Data Networks,” *IEEE INFOCOM*, 2018.
- [13] B. Xia, S. Shakkottai, and V. Subramanian. “Small-Scale Markets for Bilateral Resource Trading in the Sharing Economy,” *IEEE INFOCOM*, 2018.
- [14] A. Roy, P. Mohapatra, C. Kamhoua. “Game Theoretic Characterization of Collusive Behavior among Attackers,” *IEEE INFOCOM*, 2018.
- [15] S. Josilo and G. Dan. “A Game Theoretic Analysis of Selfish Mobile Computation Offloading,” *IEEE INFOCOM*, 2017.
- [16] X. He, H. Dai, P. Ning, and R. Dutta. “A multi-player markov stopping game for delay-tolerant and opportunistic resource sharing networks,” *IEEE INFOCOM*, 2016.
- [17] M. Andrews, Y. Jin, and M. I. Reiman. “A truthful pricing mechanism for sponsored content in wireless networks,” *IEEE INFOCOM*, 2016.
- [18] P. Naghizadeh and M. Liu. “Exit equilibrium: Towards understanding voluntary participation in security games,” *IEEE INFOCOM*, 2016.
- [19] A. Adiga, S. Venkataramanan, and A. Vullikanti. “To delay or not: temporal vaccination games on networks,” *IEEE INFOCOM*, 2016.
- [20] T. Roughgarden and E. Tardos. “How bad is selfish routing”. *Journal of the ACM*, 49(2):236–259, 2002.
- [21] N. Economides and J. Tag. “Network neutrality on the Internet: A two-sided market analysis”. *Information Economics and Policy*, 24.2 (2012): 91-104.
- [22] D. Acemoglu, G. Como, F. Fagnani, and A. Ozdaglar. “Opinion fluctuations and disagreement in social networks,” *Mathematics of Operations Research* 38.1 (2013): 1-27.
- [23] D. Yang, *et al.* “Crowdsourcing to smartphones: incentive mechanism design for mobile phone sensing”. *ACM Mobicom*, 2012.

- [24] Z. Ma, C. Duncan, and I. Hiskens. “Decentralized charging control of large populations of plug-in electric vehicles.” *IEEE Transactions on Control Systems Technology*, 21.1 (2013): 67-78.
- [25] A. Mohsenian-Rad, *et al.* “Autonomous demand-side management based on game-theoretic energy consumption scheduling for the future smart grid.” *IEEE Transactions on Smart Grid*, 1.3 (2010): 320-331.

[Recommended Papers for Out-of-class Reading] *This list is for your out-of-class reading only. Do NOT pick a paper from this list for in-class presentation.*

- [26] J. Laffont, P. Rey, and J. Tirole. “Network competition: II. price discrimination”. *RAND Journal of Economics*, 29(1):38–56, 1998.
- [27] J. Sun, E. Modiano, and L. Zheng. “Wireless channel allocation using an auction algorithm” *IEEE Journal on Selected Areas in Communications*, 24.5: 1085-1096, 2006
- [28] C. Chen, R. A. Berry, M. L. Honig, and V. G. Subramanian. “The impact of unlicensed access on small-cell resource allocation,” *IEEE INFOCOM*, 2016.
- [29] D. Niyato and E. Hossain. “Competitive spectrum sharing in cognitive radio networks: a dynamic game approach.” *IEEE Transactions on Wireless Communications*, 7.7 (2008): 2651-2660.
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- [31] Z. Wang, L. Gao, and J. Huang, “Multi-Dimensional Contract Design for Mobile Data Plan with Time Flexibility.” *ACM Mobihoc*, 2018.
- [32] Q. Ma, B. Shou, J. Huang, and T. Basar, “Dynamic Pricing in the Presence of Participation-Dependent Social Learning.” *ACM Mobihoc*, 2018.
- [33] S. Currarini, M.O. Jackson, and P. Pin. “An economic model of friendship: Homophily, minorities, and segregation”. *Econometrica*, 77.4: 1003-1045, 2009
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- [36] P. Hande, S. Rangan, M. Chiang, X. Wu, Distributed uplink power control for optimal SIR assignment in cellular data networks. *IEEE/ACM Transactions on Networking*, 16.6 (2008): 1420-1433.
- [37] W. Saad, Z. Han, HV. Poor, and T. Basar, Game-theoretic methods for the smart grid: an overview of microgrid systems, demand-side management, and smart grid communications. *IEEE Signal Processing Magazine*, 29.5: 86-105, 2012

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- [39] R. Gibbens, R. Mason, and R. Steinberg. “Internet service classes under competition,” *IEEE Journal on Selected Areas in Communications*, 18(12):2490–2498, 2000.
- [40] A. Odlyzko, “Paris metro pricing for the internet,” in *ACM conference on Electronic commerce*. New York, NY, USA, 1999
- [41] F. P. Kelly, A. Maulloo, and D. Tan, “Rate control for communication networks: Shadow prices, proportional fairness and stability,” *Journal of Operations Research Society*, vol. 49, no. 3, pp. 237–252, March 1998.
- [42] B. Briscoe, A. Odlyzko, and B. Tilly, “Metcalf’s law is wrong-communications networks increase in value as they add members-but by how much?” *IEEE Spectrum*, vol. 43, no. 7, pp. 34–39, 2006.
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- [45] V. Gajic, J. Huang, and B. Rimoldi. “Competition of Wireless Providers for Atomic Users,” *IEEE Transactions on Networking*, 2014
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