One-Person Projects

1. (Bayesian) Sections 6.1 to 6.5 from Tom Mitchell’s book.
2. (Reinforcement Learning) Up to page 17 from *Algorithms for Reinforcement Learning*, Csaba Szepesvári
   (There is a 2-person project further below based on the same book, but with slightly more material to
   be presented.)
3. *Two faces of active learning*, Sanjoy Dasgupta
4. *PAC Learning with Irrelevant Attributes*, Aditi Dhagat and Lisa Hellerstein
6. *Learning conjunctions with noise under product distributions*, Yishay Mansour and Michal Parnas
   (I am happy to discuss this as a two-person project; an extended version is available here.)
8. *Statistical queries and faulty PAC oracles*, Scott E. Decatur
9. *Learning boolean functions in an infinite attribute space*, Avrim Blum
   (Happy to discuss this as a two-person project if you intend to provide more details on the proofs.)
10. *Lower bounds for PAC learning with queries*, György Turán
14. *Combining Labeled and Unlabeled Data with Co-Training*, Avrim Blum and Tom Mitchell
   (There is a related video lecture by Tom Mitchell here. Co-training is mentioned in the second part, but
   the entire lecture is very nice and relevant.)
15. *A Complete and Tight Average-Case Analysis of Learning Monomials*, Rüdiger Reischuk and Thomas
    Zeugmann
16. *Nonuniform Learnability*, Gyora M. Benedek and Alon Itai
17. *Learnability with respect to fixed distributions*, Gyora M. Benedek and Alon Itai
18. *On Version Space Compression*, Shai Ben-David and Ruth Urner


   (I am happy to discuss this as a two-person project for the extended version that is available on arXiv.)

22. *Attribute-Efficient Evolvability of Linear Functions*, Elaine Angelino and Varun Kanade
   (I am happy to discuss this as a two-person project as well.)

23. *Ant-Based Computing*, Loizos Michael

24. *Real royal road functions – where crossover is provably essential*, Thomas Jansen and Ingo Wegener

25. *PAC Learning and Genetic Programming*, Timo Kötzing, Frank Neumann, and Reto Spöhel


27. *On the Choice of the Mutation Probability for the (1+1) EA*, Thomas Jansen and Ingo Wegener

28. *When a genetic algorithm outperforms hill-climbing*, Adam Prügel-Bennett


31. *Level-Based Analysis of Genetic Algorithms and Other Search Processes*, Dogan Corus, Duc-Cuong Dang, Anton V. Eremeev, and Per Kristian Lehre
   (I am happy to discuss this as a two-person project as well; an extended version is available on arXiv.)

32. *An Elementary Proof of a Theorem of Johnson and Lindenstrauss*, Sanjoy Dasgupta and Anupam Gupta

**Two-Person Projects**

1. (Bayesian) Sections 6.1 to 6.10 from Tom Mitchell’s book.

2. (Reinforcement Learning) Up to page 25 from *Algorithms for Reinforcement Learning*, Csaba Szepesvári


4. *Learning From Noisy Examples*, Dana Angluin and Philip Laird

5. *On the Complexity of Teaching*, Sally A. Goldman and Michael J. Kearns

6. (Membership and Equivalence Queries) *Queries and Concept Learning*, Dana Angluin


11. *Learning by Distances*, Shai Ben-David, Alon Itai, and Eyal Kushilevitz
12. *Learning with Queries but Incomplete Information*, Robert H. Sloan and György Turán

13. *Partial observability and learnability*, Loizos Michael

14. *Mick Gets Some (the Odds Are on His Side)*, Vasek Chvátal and Bruce A. Reed

15. *Distributed Learning, Communication Complexity and Privacy*, Maria-Florina Balcan, Avrim Blum, Shai Fine, and Yishay Mansour

16. *Property Testing and Its Connection to Learning and Approximation*, Oded Goldreich, Shafi Goldwasser, and Dana Ron
   (Only up to and including Section 4; that is, Part I of the paper in the first 23 pages.)