

Insights from FSTTCS2025

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Here are some interesting topics I discovered during FSTTCS which I want to learn about :

1. Semi Definite Programming - apparently SDPs arise everywhere. Maybe I'll finally get down to studying Watrous' *Quantum Information Theory*
2. Approximation Theory - it is the study of using polynomials to approximate functions. An interesting class is the study of *Tschebyscheff Polynomials*. This method forms the workhorse of Tang's thesis
3. Lattices and Homomorphic Encryption - the ability to perform computation on encrypted data using lattices is *magical*.
4. Foundations of cryptography - want to review one way functions, pseudorandom generators etc
5. Theoretical physics - apparently Landau and Lifshitz wrote a series of textbook on the *whole* of physics
6. Boolean functional analysis - Ryan O'donnel's book
7. Probabilistically Checkable Proofs
8. Gibbs distributions, markov random fields, mixing times
9. Rounding methods for LP
10. Sarel Har Peled's geometric algorithms
11. Matroids and their applications
12. Quantum error correction codes
13. Exploiting specific structure to come up with better algorithms