

# Project Topics

LA Monsoon 2020 team

October 19, 2020

1. Complex Inner product spaces and formulation of quantum theory
2. Application of Linear Algebra in ML and deep neural networks.
3. Infinite Dimensional Vector spaces.
4. Vector space model in information retrieval.
5. Linear Algebra in control theory.
6. Pauli Matrices, operator algebra and approximating quantum gates.
7. Eigenvalue problem of multiple finite automata.
8. Applications of polynomial interpolations.
9. Sparse Matrix Operations in Social Networks
10. Linear Independence and Coding: Hamming Codes.
11. Markov Processes and Learning
12. Spectral graph theory and page ranking.
13. Solving Differential equations for oscillations.
14. Estimation of Eigenvalues (exact and approximate techniques).
15. Applications of LA in Game theory and Nash Equilibriums.
16. Linear algebra in genetics.
17. Optical processor design and linear algebra.
18. Image compression and wavelet transformation.