

GATE DA LINEAR ALGEBRA

About Me

VENKATESH E

- 🎓 Master's in AI from IIT Hyderabad
- 💼 MLE-3 at PayPal (ex-Qualcomm)
- 🏆 3+ years of Machine Learning Engineering experience
- 📚 Taught GATE Data Science on RBR Sir's platform (Gate DA - 2024)
- 📄 Published research papers in AAAI 2021 & ACL 2023
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📌 GATE Official Syllabus Breakdown

- ✓ Vector space, subspaces
- ✓ Linear dependence and independence of vectors
- ✓ Matrices: projection matrix, orthogonal matrix, idempotent matrix, partitioned matrices
- ✓ Quadratic forms
- ✓ Systems of linear equations and solutions
- ✓ Gaussian elimination
- ✓ Eigenvalues and eigenvectors
- ✓ Determinant, rank, nullity, projections
- ✓ LU decomposition
- ✓ Singular value decomposition (SVD)

📄 Linear Algebra Chapter Breakdown

- 1 Foundations (12 hours)
Covers: Vectors, Vector Spaces, Subspaces, Linear Independence
- 2 Matrix Operations and Types (10 hours)
Covers: Matrices, Orthogonal, Idempotent, Projection Matrices, Partitioned Matrices
- 3 Systems of Linear Equations (7 hours)
Covers: Gaussian Elimination, Solutions of Linear Equations
- 4 Matrix Properties (8 hours)
Covers: Determinants, Inverse, Rank, Nullity
- 5 Eigenvalues, Eigenvectors, and Decompositions (10 hours)
Covers: Projections, Orthogonality, Quadratic Forms, LU Decomposition, Eigenvalues & Eigenvectors
- 6 Singular Value Decomposition (5 hours)
Covers: SVD, Applications in ML and Data Science
- 7 Problem Solving & GATE PYQs (6 hours)
Covers: Basic, Intermediate, and Advanced GATE Problems