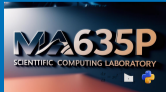# MA635P-Scientific Programming Laboratory

**Krylov Subspace: MINRES Method for Social Network**

**Panchatcharam Mariappan[1]**

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Department of Mathematics and Statistics
IIT Tirupati, Tirupati

**April 2025**

# Team

# Team

- MA23M003 AMAL P
- MA23M008 JOYDIP ROY
- MA23M020 ABHISHEK KUMAR YADAV

# Work

# Social Network Matrix

1. Understand how does the Eigenvalues helps for network analysis
   Reference1 and Reference

# MINRES

1. Generate a linear solve package for MINRES using Python
2. Use the following reference Reference
3. Use this methods to compute the eigenvalues of a given matrix

# Tasks

1. Construct a social network matrix Reference
2. Use python program and MINRES method to compute eigenvalues

# Deliverable

1. Python notebook (Google colab)
2. Report, Latex Presentation and video presentation, each one has to explain 3 minutes about their contribution and how did you develop the code, data etc.

# Thanks

**Doubts and Suggestions**

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