

This is an incomplete list of topics of applications for linear algebra

You do not need to choose a topic from this list; it is here just for reference if you need ideas. Any application of linear algebra is acceptable.

Business/industry applications

- Purchasing or scheduling multipurpose machines.
- Optimizing production of products that use multiple supplies.
- Comparing business model options.
- Movement of robotic arms
- Predicting future customer base

Logistics applications

- Reconstructing traffic flow from incomplete data

Environmental applications

- Predator-prey modeling

Economics applications

- Input-output modeling

Physics applications

- Analyzing electrical networks
- Analyzing forces
- Rotating images
- Reference angles and choice of coordinates
- Projections
- Optics
- Acoustics
- Mixtures

Prediction

- Predicting future weather patterns
- Predicting population growth

Mathematical applications

- Volume of a deformed shape
- Cryptography: the Hill cypher
- Systems of first order linear differential equations
- Polyomino tiling

- Coding theory: linear codes
- QR Factorization
- Quadratic Forms
- Function Representation
- Curve Fitting
- Linear Programming (note that this has nothing to do with computer programming)
- Adjacency matrices (graph theory)

Computer Science applications

- Cryptography: the Hill cypher
- Image Compression
- Coding theory: linear codes