On Egenvalues and Eigenvectors of Square Matrices

http://ocw.mit.edu/courses/mathematics/18-06-linear-algebra-spring-2010/tools/

http://web.mit.edu/18.06/www/Demos/eigen-applet-all/eigen_sound_all.html

MIT, Linear Algebra (18.06)
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Ref: Gilbert Strang. *18.06 Linear Algebra, Spring 2010*. (Massachusetts Institute of Technology: MIT OpenCourseWare), http://ocw.mit.edu (Accessed). License: Creative Commons BY-NC-SA

Eigenvalue Demonstrations (MIT)

Eigenvalue Demonstrations

The demonstrations below employ Java® applets with voice-over narration to show some Eigenvalue concepts.

Demo 1 - This 3-minute demo shows eigenvectors of 2 by 2 matrices

The demo is also broken into 7 independent pieces:

- Part 1
- Part 2
- Part 3
- Part 4
- Part 5
- Part 6
- Part 7

Demo 2 - Powers A^nV lead toward the top eigenvalue/eigenvector

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Mini-lectures on Eigenvalues

The mini-lectures with voice-over narration below help to explain some key Eigenvalue concepts.

Full Lecture (all eight together)

Or view individually (about 2 minutes each)

- det(A-\lambda I)=0
- Eigenvectors and Trace
- Powers
- Diagonalization
- Differential Equations
- Symmetry
- Positive Definite
- SVD

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