

My Favorite MAA Articles for Linear Algebra

Jeremy Case
Taylor University
JMM San Antonio, 2015

CMJ Articles Mentioned in talk:

The Growing Importance of Linear Algebra in Undergraduate Mathematics

Alan Tucker

The College Mathematics Journal

Vol. 24, No. 1 (Jan., 1993), pp. 3-9

[Highly Recommended]

Arithmetic Matrices and the Amazing Nine-Card Monte

Dean Clark and Dilip K. Datta

The College Mathematics Journal

Vol. 24, No. 1 (Jan., 1993),

pp. 52-56

[Great card trick]

Singular Vectors' Subtle Secrets

David James, Michael Lachance and Joan Remski

The College Mathematics Journal Vol. 42, No. 2 (March 2011), pp. 86-95

Math Magazine Articles Mentioned

Visualization of Matrix Singular Value Decomposition

Cliff Long

Mathematics Magazine

Vol. 56, No. 3 (May, 1983), pp. 161-167

Turning Lights Out with Linear Algebra

Marlow Anderson and Todd Feil

Mathematics Magazine

Vol. 71, No. 4 (Oct., 1998), pp. 300-303

An Easy Solution to Mini Lights Out

Jennie Missigman and Richard Weida

Mathematics Magazine

Vol. 74, No. 1 (Feb., 2001), pp. 57-59

Two Reflected Analyses of Lights Out

Óscar Martín-Sánchez and Cristóbal Pareja-Flores

Mathematics Magazine

Vol. 74, No. 4 (Oct., 2001), pp. 295-304

The American Mathematical Monthly

Applications of Linear Algebra in Calculus

Jack W. Rogers, Jr.,

The American Mathematical Monthly, Vol. 104, No. 1

(Jan., 1997), pp. 20-26.

Pitfalls in Computation, or Why a Math Book Isn't Enough

George E. Forsythe

The American Mathematical Monthly (Nov. 1970)

20-26.

Numerical Linear Algebra on the HP-28 or How to Lie With Supercalculators

Yves Nievergelt

The American Mathematical Monthly

Vol. 98, No. 6 (Jun. - Jul., 1991), pp. 539-544

Six, Lies, and Calculators

R. M. Corless

The American Mathematical Monthly

Vol. 100, No. 4 (Apr., 1993), pp. 344-350

Down with Determinants!

Sheldon Axler

The American Mathematical Monthly

Vol. 102, No. 2 (Feb., 1995), pp. 139-154

Additional Favorite Articles

College Mathematics Journal

(Roughly by date)

Gems of Exposition in Elementary Linear Algebra

David Carlson, Charles R. Johnson, David Lay and A. Duane Porter

The College Mathematics Journal

Vol. 23, No. 4 (Sep., 1992), pp. 299-303

Iterative Methods in Introductory Linear Algebra

Donald R. LaTorre

The College Mathematics Journal

Vol. 24, No. 1 (Jan., 1993), pp. 79-88

[gauss siedel]

The Linear Algebra Curriculum Study Group Recommendations for the First Course in Linear Algebra

David Carlson, Charles R. Johnson, David C. Lay and A. Duane Porter

The College Mathematics Journal

Vol. 24, No. 1 (Jan., 1993), pp. 41-46

[the standard]

Some Applications of Elementary Linear Algebra in Combinatorics

Richard A. Brualdi and Jennifer J. Q. Massey

The College Mathematics Journal

Vol. 24, No. 1 (Jan., 1993), pp. 10-19

[combinatorics, the marriage problem]

[The Growing Importance of Linear Algebra in Undergraduate Mathematics](#)

[Alan Tucker](#)

The College Mathematics Journal, Vol. 24, No. 1 (Jan., 1993), pp. 3-9

[Teaching Linear Algebra: Must the Fog Always Roll in?](#)

[David Carlson](#)

The College Mathematics Journal, Vol. 24, No. 1 (Jan., 1993), pp. 29-40

[challenges of teaching linear algebra]

A Singularly Valuable Decomposition: The SVD of a Matrix

Dan Kalman

The College Mathematics Journal

Vol. 27, No. 1 (Jan., 1996), pp. 2-23

Published by: [Mathematical Association of America](#)

Stable URL: <http://www.jstor.org/stable/2687269>

[nice article] but more generally linked to least squares. Gives nice example to compressing data.

Fractals in Linear Algebra

James A. Walsh

The College Mathematics Journal

Vol. 27, No. 4 (Sep., 1996), pp. 298-304

Published by: [Mathematical Association of America](#)

Stable URL: <http://www.jstor.org/stable/2687242>

Bounding the Roots of Polynomials

Holly P. Hirst and Wade T. Macey

The College Mathematics Journal

Vol. 28, No. 4 (Sep., 1997), pp. 292-295

Published by: [Mathematical Association of America](#)

Stable URL: <http://www.jstor.org/stable/2687152>

Using the College Mathematics Journal Topic Index in Undergraduate Courses

Donald E. Hooley

The College Mathematics Journal

Vol. 28, No. 2 (Mar., 1997), pp. 106-109

Published by: [Mathematical Association of America](#)

Stable URL: <http://www.jstor.org/stable/2687433>

[Include ideas similar to presentation]

Take a Walk on the Boardwalk

Stephen D. Abbott and Matt Richey

The College Mathematics Journal

Vol. 28, No. 3 (May, 1997), pp. 162-171

Published by: [Mathematical Association of America](#)

Stable URL: <http://www.jstor.org/stable/2687519>

Page Count: 10

[Markov chains and Monopoly]

A Fresh Approach to the Singular Value Decomposition

Colm Mulcahy and John Rossi

The College Mathematics Journal

Vol. 29, No. 3 (May, 1998), pp. 199-207

Published by: [Mathematical Association of America](#)

Stable URL: <http://www.jstor.org/stable/2687046>

A Picture Is Worth a Thousand Words

J. B. Thoo

The College Mathematics Journal

Vol. 29, No. 5 (Nov., 1998), pp. 408-411

Published by: [Mathematical Association of America](#)

Stable URL: <http://www.jstor.org/stable/2687256>

[another chart of the four fundamental subspaces]

Surface Approximation and Interpolation via Matrix SVD

Andrew E. Long and Clifford A. Long

The College Mathematics Journal

Vol. 32, No. 1 (Jan., 2001), pp. 20-25

Published by: [Mathematical Association of America](#)

Stable URL: <http://www.jstor.org/stable/2687215>

[Includes another bust of Abraham Lincoln]

Image Reconstruction in Linear Algebra

Andrzej Kedzierawski and Olympia Nicodemi

The College Mathematics Journal

Vol. 32, No. 2 (Mar., 2001), pp. 128-134

Published by: [Mathematical Association of America](#)

Stable URL: <http://www.jstor.org/stable/2687120>

[some svd analysis, point of image reconstruction]

Teaching Linear Algebra: Issues and Resources

Jane M. Day and Dan Kalman

The College Mathematics Journal

Vol. 32, No. 3 (May, 2001), pp. 162-168

Published by: [Mathematical Association of America](#)

Stable URL: <http://www.jstor.org/stable/2687464>

Talks about what other resources are available. A follow-up to the 1993 theme issue

Linear Algebra in the Financial World

Barbara Swart

The College Mathematics Journal

Vol. 32, No. 3 (May, 2001), pp. 208-210

Published by: [Mathematical Association of America](#)

Stable URL: <http://www.jstor.org/stable/2687475>

[nice article about remembering the four fundamental subspaces]

Elementary Linear Algebra and the Division Algorithm

Airton von Sohsten de Medeiros

The College Mathematics Journal

Vol. 33, No. 1 (Jan., 2002), pp. 51-53

Published by: [Mathematical Association of America](#)

Stable URL: <http://www.jstor.org/stable/1558982>

[links linear algebra to rings of polynomials]

Fibonacci Determinants

Nathan D. Cahill, John R. D'Errico, Darren A. Narayan and Jack Y. Narayan

The College Mathematics Journal

Vol. 33, No. 3 (May, 2002), pp. 221-225

Published by: [Mathematical Association of America](#)

Stable URL: <http://www.jstor.org/stable/1559033>

An Underdetermined Linear System for GPS

Dan Kalman

The College Mathematics Journal
Vol. 33, No. 5 (Nov., 2002), pp. 384-390
Published by: [Mathematical Association of America](#)
Stable URL: <http://www.jstor.org/stable/1559010>
[nice article, not my style but may influence others]

How (Not) to Solve Quadratic Equations

Yves Nievergelt

The College Mathematics Journal
Vol. 34, No. 2 (Mar., 2003), pp. 90-104
Published by: [Mathematical Association of America](#)
Stable URL: <http://www.jstor.org/stable/3595780>
[shows rounding errors related to quadratic equations and others. Shows pathological examples]

The Sample Correlation Coefficient from a Linear Algebra Perspective

C. Ray Rosentrater

The College Mathematics Journal
Vol. 37, No. 1 (Jan., 2006), pp. 47-50
Published by: [Mathematical Association of America](#)
Stable URL: <http://www.jstor.org/stable/27646273>

Fibonacci Identities via the Determinant Sum Property

Michael Z. Spivey

The College Mathematics Journal
Vol. 37, No. 4 (Sep., 2006), pp. 286-289
Published by: [Mathematical Association of America](#)
Stable URL: <http://www.jstor.org/stable/27646357>

A Direct Proof That Row Rank Equals Column Rank

Nicholas Loehr

The College Mathematics Journal
Vol. 38, No. 4 (Sep., 2007), pp. 300-301
Published by: [Mathematical Association of America](#)
Stable URL: <http://www.jstor.org/stable/27646509>

A Tricky Linear Algebra Example

David Sprows

The College Mathematics Journal

Vol. 39, No. 1 (Jan., 2008), pp. 54-56

Published by: [Mathematical Association of America](#)

Stable URL: <http://www.jstor.org/stable/27646568>

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[shows the sum of a magic trick is always 65]

Finding Matrices that Satisfy Functional Equations

Scott Duke Kominers

The College Mathematics Journal

Vol. 40, No. 4 (September 2009), pp. 289-292

Published by: [Mathematical Association of America](#)

Stable URL: <http://www.jstor.org/stable/25653753>

Additional *Math Magazine* Articles

Sorted roughly by year

Computing Eigenvalues and Eigenvectors without Determinants

William A. McWorter, Jr. and Leroy F. Meyers

Mathematics Magazine

Vol. 71, No. 1 (Feb., 1998), pp. 24-33

Published by: [Mathematical Association of America](#)

Stable URL: <http://www.jstor.org/stable/2691340>

[another in a series of down with determinants]

Spectral Analysis of the Supreme Court

Brian L. Lawson, Michael E. Orrison and David T. Uminsky

Mathematics Magazine

Vol. 79, No. 5 (Dec., 2006), pp. 340-346

Published by: [Mathematical Association of America](#)

Stable URL: <http://www.jstor.org/stable/27642969>

[Recommended]

Quartic Coincidences and the Singular Value Decomposition

Mathematics Magazine

Vol. 86, No. 5, December 2013

John H. Clifford, Michael Lachance

DOI: 10.4169/math.mag.86.5.340

Stable URL: <http://www.jstor.org/stable/10.4169/math.mag.86.5.340>

The American Mathematical Monthly

Teaching and Testing Mathematics Reading

Carl C. Cowen

The American Mathematical Monthly

Vol. 98, No. 1 (Jan., 1991), pp. 50-53

Published by: [Mathematical Association of America](#)

Stable URL: <http://www.jstor.org/stable/2324038>

[some of the same ideas in this talk]

Gram-Schmidt Orthogonalization by Gauss Elimination

Lyle Pursell and S. Y. Trimble

The American Mathematical Monthly

Vol. 98, No. 6 (Jun. - Jul., 1991), pp. 544-549

Published by: [Mathematical Association of America](#)

Stable URL: <http://www.jstor.org/stable/2324877>

[more about the Gaussian elimination than Gram-Schmidt]

Linear Algebra by Analogy

Scott H. Hochwald

The American Mathematical Monthly

Vol. 98, No. 10 (Dec., 1991), pp. 918-926

Published by: [Mathematical Association of America](#)

Stable URL: <http://www.jstor.org/stable/2324148>

[opinion piece]

The Fundamental Theorem of Linear Algebra

Gilbert Strang

The American Mathematical Monthly

Vol. 100, No. 9 (Nov., 1993), pp. 848-855

Published by: [Mathematical Association of America](#)

Stable URL: <http://www.jstor.org/stable/2324660>

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[classic]

Linear Algebra and Quantum Chemistry

Jerome A. Goldstein and Mel Levy

The American Mathematical Monthly

Vol. 98, No. 8 (Oct., 1991), pp. 710-718

Published by: [Mathematical Association of America](#)

Stable URL: <http://www.jstor.org/stable/2324422>

Page Count: 9

[For chemists]

The Angle Between Complementary Subspaces

Ilse C. F. Ipsen and Carl D. Meyer

The American Mathematical Monthly

Vol. 102, No. 10 (Dec., 1995), pp. 904-911

Published by: [Mathematical Association of America](#)

Stable URL: <http://www.jstor.org/stable/2975268>

A Geometric Approach to Determinants

John Hannah

The American Mathematical Monthly

Vol. 103, No. 5 (May, 1996), pp. 401-409

Published by: [Mathematical Association of America](#)

Stable URL: <http://www.jstor.org/stable/2974931>

Page Count: 9

[similar to [down with determinants](#)]

Scheduling Conflict-Free Parties for a Dating Service

Bryan L. Shader and Chanyoung Lee Shader

The American Mathematical Monthly

Vol. 104, No. 2 (Feb., 1997), pp. 99-106

Published by: [Mathematical Association of America](#)

Stable URL: <http://www.jstor.org/stable/2974976>
[interesting ideas, but I have not used this **bipartite** graphs]

Carries, Combinatorics, and an Amazing Matrix

John M. Holte

The American Mathematical Monthly

Vol. 104, No. 2 (Feb., 1997), pp. 138-149

Published by: [Mathematical Association of America](#)

Stable URL: <http://www.jstor.org/stable/2974981>

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[about addition and the probability of a carry in a long digit number]

When Is a Linear Operator Diagonalizable?

Marco Abate

The American Mathematical Monthly

Vol. 104, No. 9 (Nov., 1997), pp. 824-830

Published by: [Mathematical Association of America](#)

Stable URL: <http://www.jstor.org/stable/2975287>

Page Count: 7

[candidate but heavy on the characteristic polynomial]

When Close Enough is Close Enough

Edward R. Scheinerman

The American Mathematical Monthly

Vol. 107, No. 6 (Jun. - Jul., 2000), pp. 489-499

Published by: [Mathematical Association of America](#)

Stable URL: <http://www.jstor.org/stable/2589344>

[Ford winner]

The Matrices of Pascal and Other Greats

Lidia Aceto and Donato Trigiante

The American Mathematical Monthly

Vol. 108, No. 3 (Mar., 2001), pp. 232-245

Published by: [Mathematical Association of America](#)

Stable URL: <http://www.jstor.org/stable/2695384>

Pascal Matrices

Alan Edelman and Gilbert Strang

The American Mathematical Monthly

Vol. 111, No. 3 (Mar., 2004), pp. 189-197

Published by: [Mathematical Association of America](#)

Stable URL: <http://www.jstor.org/stable/4145127>
[nice connections to Pascal's triangle and other work]

An Elementary Proof of Marden's Theorem

Dan Kalman

The American Mathematical Monthly

Vol. 115, No. 4 (Apr., 2008), pp. 330-338

Published by: [Mathematical Association of America](#)

Stable URL: <http://www.jstor.org/stable/27642475>

Carries, Shuffling, and an Amazing Matrix

Persi Diaconis and Jason Fulman

The American Mathematical Monthly

Vol. 116, No. 9 (Nov., 2009), pp. 788-803

Published by: [Mathematical Association of America](#)

Stable URL: <http://www.jstor.org/stable/40391298>