Happy 60th Birthday, Jim!
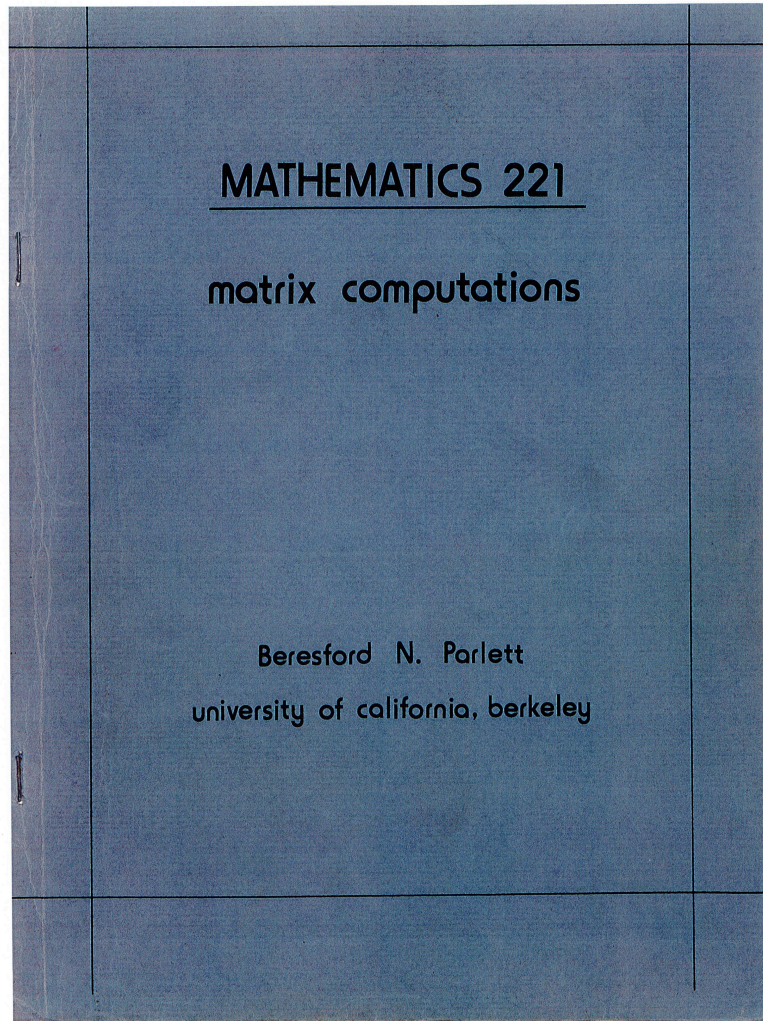

October 19, 2015

Six Books

Celebrating Jim Demmel's 60th Birthday

October 24, 2015

Six Books

1. Student

2. Apprentice

3. Family

4. Colleague

5. Teacher

6. Impact

1ˢᵗ Book - Student

MATHEMATICS 221

matrix computations

Beresford N. Parlett

university of california, berkeley

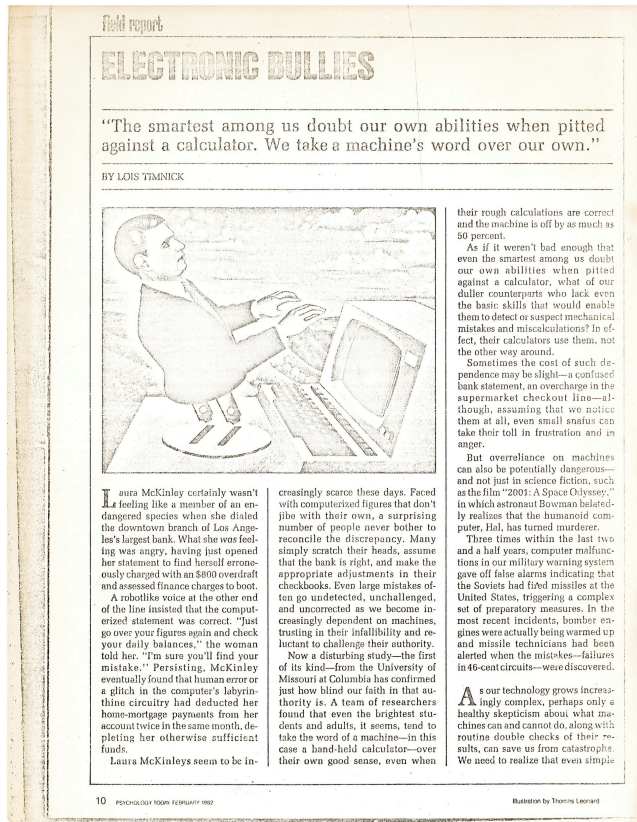**Math 221 Lecture Notes by Beresford Parlett**

Took this class with Jim during Fall Quarter 1978 (Ole Hald)

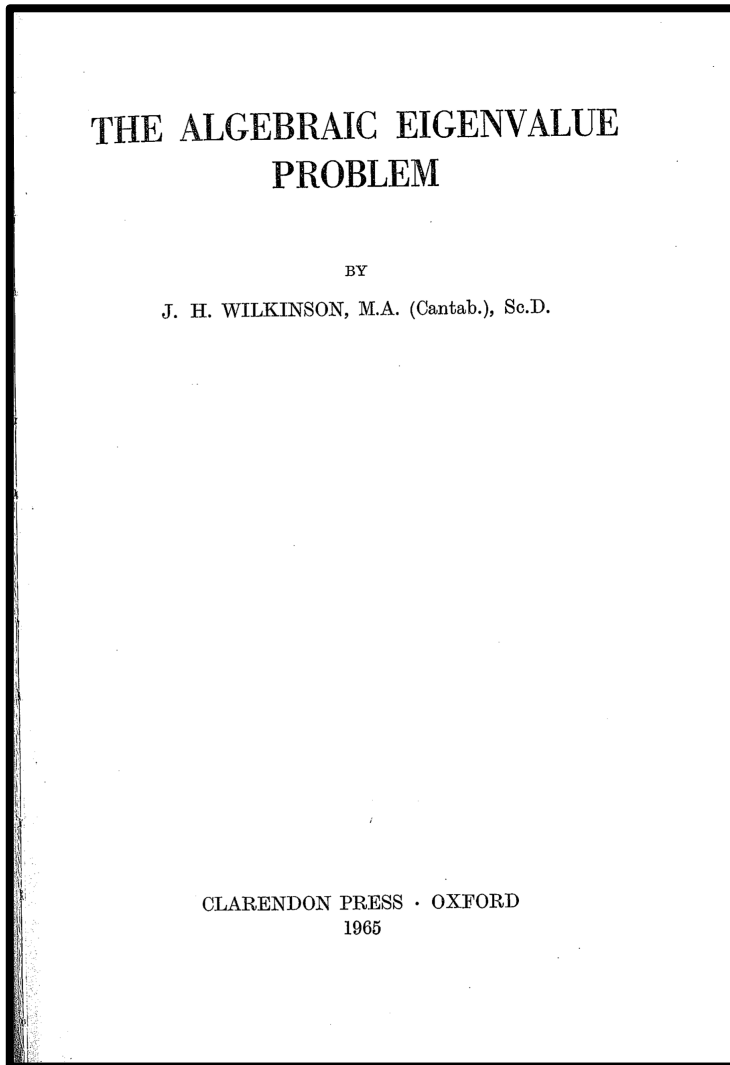# We did not have PhD Comics back in 1978, but …

Found in my copy of Math 221 lecture notes

Copy of article from "Psychology Today", 1982.

2nd Book - Apprentice

THE ALGEBRAIC EIGENVALUE
PROBLEM

BY

J. H. WILKINSON, M.A. (Cantab.), Sc.D.

CLARENDON PRESS · OXFORD
1965

**Jim became Velvel
Kahan's PhD student**

Why Apprentice?

About being Velvel's Apprentice

"When I was a grad student Wilkinson was visiting for a while, working with Velvel and Beresford. One time we met in the hallway in Evans, and he said to me: "You know, I don't think you're nearly as smart as your advisor thinks you are." I smiled and went on my way."

Der Zauberlehrling

The Sorcerer's Apprentice

Der Zahlenlehrling

Zum Gedächtnis an Gene Golub

Von J. Demmel

The Numerical Apprentice

In memory of Gene Golub

By J. Demmel
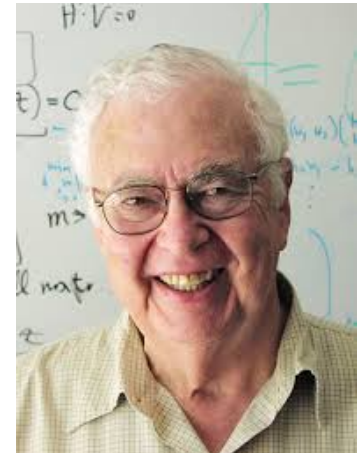
Der Zauberlehrling	The Sorcerer's Apprentice
Der Zahlenlehrling **Zum Gedächtnis an Gene Golub**	**The Numerical Apprentice** **In memory of Gene Golub**

Hat der alte Matrixmeister
Sich für immer wegbegeben!
Und nun sollen seine Rechner
Auch nach meinem Willen
    zählen!
	The matrix-master's vanished
	And forever gone away!
	Programs called by him, now
	    banished,
	My commands shall soon obey!

Seine Wort' und Werke
Merkt' ich, und den Brauch
Und mit Geistesstärke
Werd' ich rechnen auch.

Every step and saying
That he used, I know,
And with sprites obeying
My calculus I'll show.

Sende, sende

Manche Busse

Dass zum Zwecke

Data fliessen,

Und mit schnellen Protokollen

Zu dem Speicher sich
ergiessen!

Data flowing

Over busses

Spare not any

Cache prefetching

Ever streaming, tightly scheduled,

Toward the cache in packets
gushing.

But there is more …

WALLACE GIVENS
Applied Mathematics Divison
Argonne, Ill. 60440
39

It is a pleasure to acknowledge the assistance I have received from numerous friends in this enterprise. I would like to thank Professors J. W. Carr and R. C. F. Bartels for successive invitations to lecture at the Summer Schools in Ann Arbor, thereby providing me with an annual stimulus for completing the manuscript. I am particularly indebted to Professors G. E. Forsythe and (W. J.) Givens who generously provided duplicating facilities for the two main drafts of the manuscript. This has enabled me to benefit from the opinions of a much wider circle of readers than would otherwise have been possible.

So how did Givens' copy of Wilkinson's book find its way to Jim?
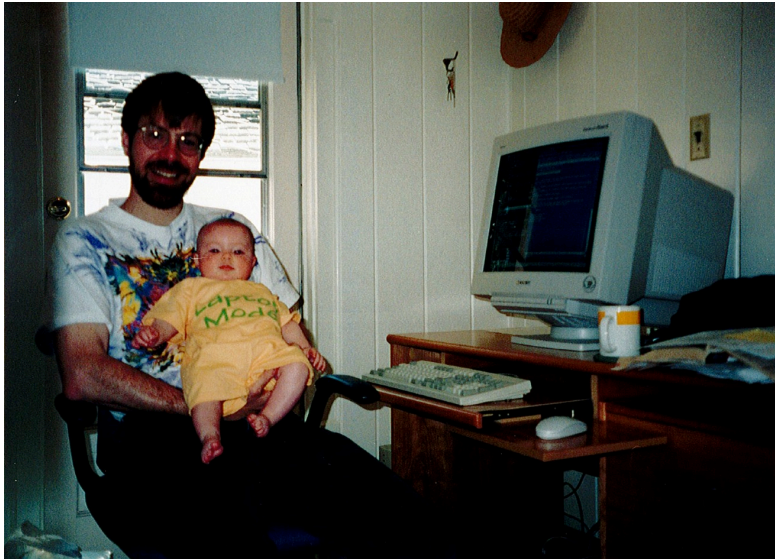
3rd Book - Family
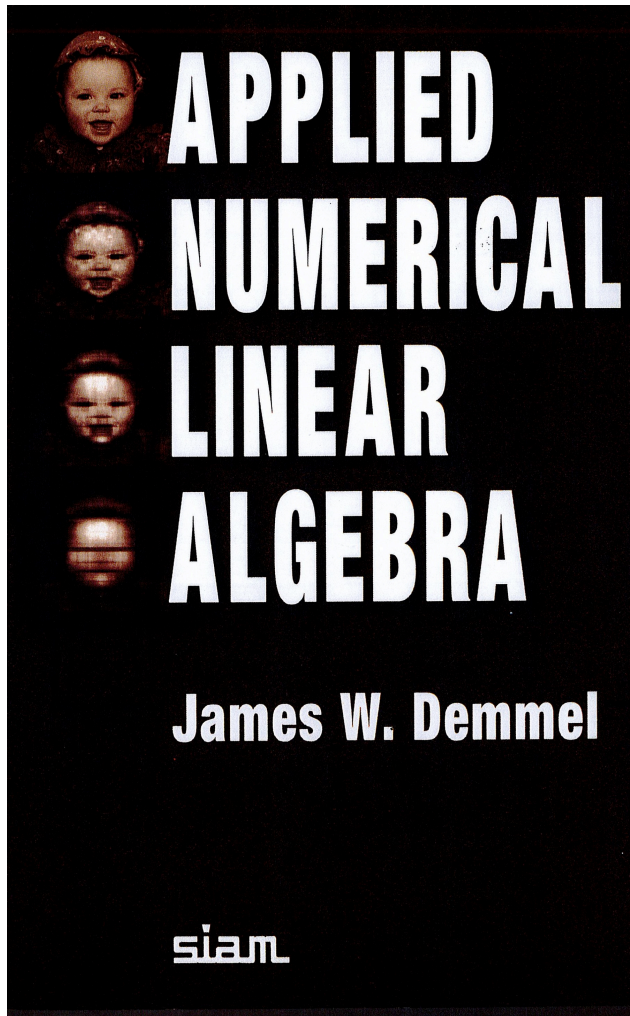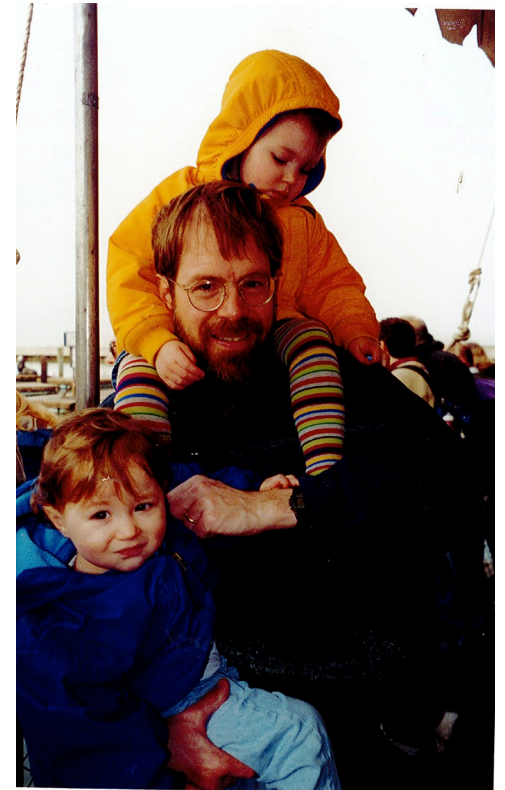

Appeared 1997, has been used at more than 45 schools

Family Photos

Megan as "laptop model"

... and with Megan and Nathan

Family Collaboration

Jim and Kathy have 31 publications together, many about performance, autotuning,... but there is one that peaked my curiosity:

On Holder-Brascamp-Lieb inequalities for torsion-free discrete Abelian groups, October 2015.

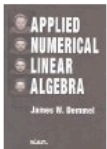# Don't Underestimate the Value of Applied Linear Algebra

Book 4 - Colleague

LAPACK, ScalaPACK have been highly influential software projects.

They were also community projects that speak to Jim's collaborative spirit.

From left: Sven Hammarling, Z. Bai, Anne Greenbaum, Ed Anderson, Alan McKenney, Jack Dongarra, Jeremy DuCroz, Jim Demmel

From an unnamed collaborator

"Horst,

I don't have any good stories about Jim that would be embarrassing or amusing … "

Book 5 - Teacher

U.C. Berkeley CS267 Home Page

Applications of Parallel Computers

Spring 2015

T Th 9:30-11:00, 306 Soda Hall

Instructor:

- Jim Demmel

    - Offices:
    564 Soda Hall ("Virginia", in ParLab), (510)643-5386
    831 Evans Hall
    - Office Hours: **(subject to change)** MWF 10-11 (starting Jan 21)
    - (send email)

Teaching Assistants:

- Evangelos Georganas

    - Office: 5th Floor Soda Hall (ASPIRE Lab)
    - Office Hours: T/Th 1-2pm, in 283E Soda Hall (updated Jan 19)
    - (send email)

- Forrest Iandola

Not a book, but some of the most influential lecture notes

CS267 at EECS UC Berkeley and Worldwide

- Taught annually since 1993, with help of many of us here today

- Lecture notes used at many universities

- Adopted for world-wide broadcast by NSF/XSEDE

- SPOC (small personalized online course) with about 150 students at 17 universities in 2014

Students

Mathematics Genealogy Project

James Weldon Demmel

MathSciNet

Ph.D. University of California, Berkeley 1983

Dissertation: *A Numerical Analyst's Jordan Canonical Form*

Advisor: William Morton Kahan

Students:
Click here to see the students listed in chronological order.

Name	School	Year	Descendants
Grey Ballard	University of California, Berkeley	2013	
David Bindel	University of California, Berkeley	2006	
David Blackston	University of California, Berkeley	2000	
Tzu-Yi Chen	University of California, Berkeley	2001	
Mark Hoemmen	University of California, Berkeley	2010	
Plamen Koev	University of California, Berkeley	2002	
Jiawang Nie	University of California, Berkeley	2006	
Huan Ren	University of California, Berkeley	1996	
Edward Riedy	University of California, Berkeley	2010	
Richard Vuduc	University of California, Berkeley	2004	1

According to our current on-line database, James Demmel has 10 students and 11 descendants.

Plamen Koev

Sherry Li

Book 6 – Impact
The book that still needs to be written
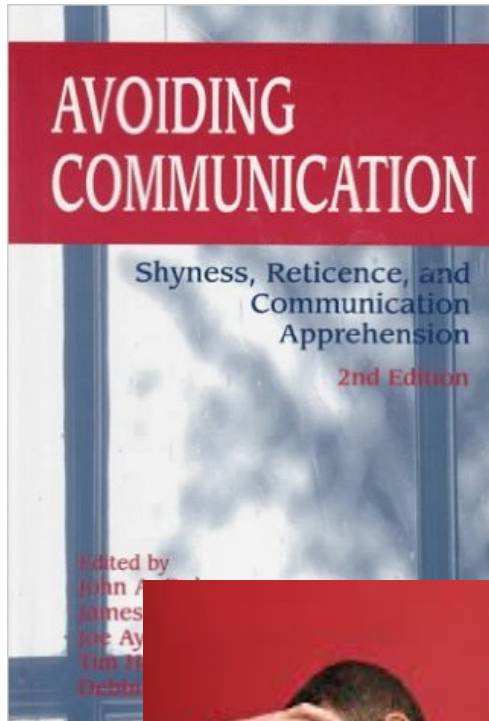
Communication Avoiding
Algorithms

By Jim Demmel

Berkeley 2020

Because otherwise …

Either the psychologists will claim the field,

… or we will have very fast, but incorrect computations

Happy 60th Birthday, Jim!

October 19, 2015