



Celebrating Charlie

David Bindel Ilse Ipsen Cleve Moler

13 Jul 2016



Not the First Rodeo!



└ Not the First Rodeo!

Not the First Rodeo!



I'm glad everyone could come out for Charlie's retirement minisymposium. The idea for this actually started with Michael Overton, who unfortunately could not attend due to the conflict with ILAS.

Michael suggested we have a workshop in Charlie's honor at Cornell, scheduled jointly with his (already-planned) retirement. While the timing for that did not work well, we decided having an event at SIAM – where many of Charlie's friends and colleagues would already be attending – was a great alternative.

Needless to say, Charlie did have the party at Cornell with his local colleagues. We had a great time.



2016-07-15



As I said, we had a great time. The novelty wineglasses feature in several pictures from the event.



Cornell CS Scientific Computing Group (2013)



David Bindel



Doug James



Charlie Van Loan

└ Cornell CS Scientific Computing Group (2013)



David Bindel



Doug James



Charlie Van Loan

For several years, we greeted prospective graduate students to the department with an overview of who is in which group and what types of things we're interested in. We've done other things for the past couple years, but the last time I gave this talk (2013), my intro slide looked like this.



Cornell CS Scientific Computing Group (2016)



David Bindel



Anil Damle



Charlie Van Loan

└ Cornell CS Scientific Computing Group (2016)



David Bindel



Anil Damle

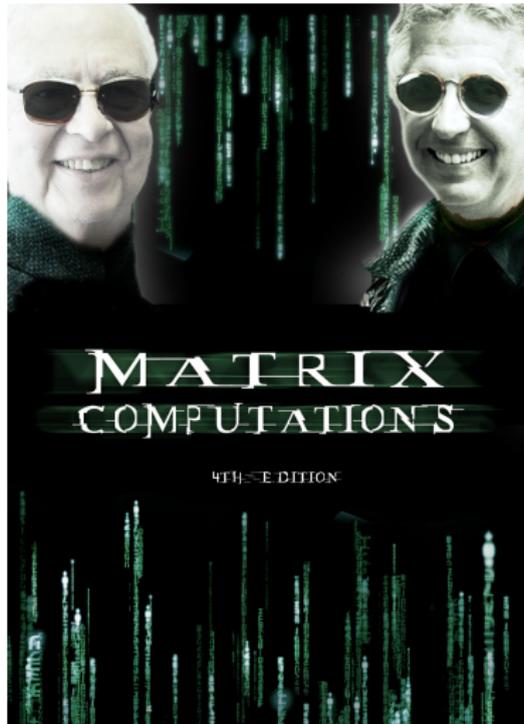


Charlie Van Loan

Since then, we've had a few changes. Doug left for Stanford; Anil is coming from Stanford; and I grew my beard out. But I'm going to keep this picture of Charlie on any such slide for as long as he'll let me!



Charlie's Star Power



└ Charlie's Star Power

Charlie's Star Power



Of course, part of the reason for keeping Charlie's picture is his star power in the world at large! Even outside of our field, some students are likely to know of him through his book.



Charlie at Cornell

- ▶ Joined 1975 (41 years!)
- ▶ Chair 1999-2006 (longest-serving chair of Cornell CS)
- ▶ Served as director of grad studies, MEng, and ugrad
 - ▶ Among other times: Director of Ugrad, 1999-2003
- ▶ Next up: Dean of Faculty

Charlie at Cornell

Charlie at Cornell

- Joined 1975 (41 years!)
- Chair 1999-2006 (longest-serving chair of Cornell CS)
- Served as director of grad studies, MEng, and undergrad
 - Among other titles: Director of Ugrad, 1999-2003
- Next up: Dean of Faculty

We know about Charlie's influence in our field; that's what a lot of today has been about. I'd like to talk for just a minute or two about his influence at Cornell. Charlie has been at Cornell for longer than I have been alive, and served in every role in the department with distinction. Sometimes, he served in more than one role at once!



Charlie at Cornell

The over arching point is that Charlie, like all the NA CS faculty, is very well known in Eng and the sciences. He gave us credibility because of his scientific excellence. He also took on ALL of the CS admin jobs, gfr, ufo, dept chair, he was great at all of them. He is also a person of the highest integrity, never seeking advantage for himself, never asking for favors, always willing to work hard.

– Bob Constable

Charlie at Cornell

Charlie at Cornell

The over arching point is that Charlie, like all the NA CS faculty, is very well known in Eng and the sciences. He gave us credibility because of his scientific excellence. He also took on ALL of the CS admin jobs, gtr, ult, dept chair, he was great at all of them. He is also a person of the highest integrity, never seeking advantage for himself, never asking for favors, always willing to work hard.

— Bob Constable

At Charlie's retirement in Ithaca, Bob Constable gave some remarks, and I asked for his notes as I headed here. Alas, his notes are in Ithaca and he is in Israel at the moment. But he did send a very nice email, and I've taken the liberty of excerpting the paragraph about Charlie.



Charlie at Cornell??



*... ALL of the CS admin jobs, gfr, **ufo**, dept chair, ...*

└ Charlie at Cornell??

Charlie at Cornell??



... ALL of the CS admin jobs, gfr, ufo, dept chair, ...

I know GFR is Cornell-speak for Graduate Field Representative. I assume that UFO is the equivalent for undergraduates, but I don't know! Of course, if you are a fan of the Loony Toons, you probably know that we never see Marvin the Martian's face, so it could be Charlie under there.

Notice the hand gesture that Marvin is making? During a recruiting season a couple years ago, someone in the department noticed that every candidate asked about "big data" gave a different definition but used the same gesture. Well, Charlie was doing big data before it became fashionable...



Charlie's Intellectual Influence: Big Data

A $2 \times 2 \times \dots \times 2$ tensor is big data!

– Charlie

2016-07-15

└ Charlie's Intellectual Influence: Big Data

Charlie's Intellectual Influence: Big Data

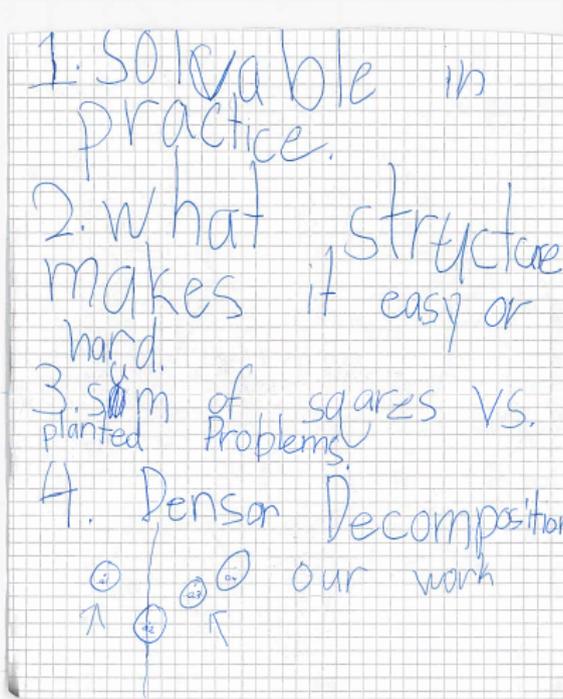
A $2 \times 2 \times \dots \times 2$ tensor is big data!

— Charlie

Of course, I have never seen Charlie make the “big data” gesture.



Influence Across Areas/Generations at Cornell



1. Solvable in practice.

2. What structure makes it easy or hard.

3. ~~sum~~ of ~~scars~~ vs. planted problems.

4. Denson Decomposition

our work

The diagram shows a vertical line with a circle containing the number 42 at the bottom. Two arrows point upwards from this circle to two other circles, one containing 22 and the other containing 20. Above the 22 circle is another circle containing 27, and above the 20 circle is another circle containing 20. This represents a decomposition of the number 42 into 22 and 20, which are further decomposed into 27 and 20.

└ Influence Across Areas/Generations at Cornell



Charlie's influence in pointing out that tensors are big data extends beyond the usual suspects, at Cornell or elsewhere. Some of you may suspect from the handwriting in these notes that it was not written by a faculty member. In fact, these were taken some years ago by Bobby K and Miranda's daughter Julia (reproduced with permission). You may notice if your eyesight is good that there is a mention of tensors at the bottom...



Influence Across Areas/Generations at Cornell



└ Influence Across Areas/Generations at Cornell



And here it is a little bigger.



Charlie and me (David)

- ▶ I first bought Charlie's book as an undergrad (c. 1997).
 - ▶ Book conceived 1977 after JHU workshop with Gene.
 - ▶ This is also the year that I was born.
- ▶ I first met Charlie in person in 1999.¹
- ▶ He was CS chair at Cornell my entire time in grad school.
- ▶ Around the corner since 2009 – colleague, mentor, friend.

¹I was a prospective grad student. He may not remember this.

└ Charlie and me (David)

Charlie and me (David)

- I first bought Charlie's book as an undergrad (c. 1997).
 - Book conceived 1977 after JHU workshop with Gene.
 - This is also the year that I was born.
- I first met Charlie in person in 1999.¹
- He was CS chair at Cornell my entire time in grad school.
- Around the corner since 2009 – colleague, mentor, friend.

¹I was a prospective grad student. He may not remember this.

Charlie started influencing me almost two decades ago now. His book, while not the first numerical analysis book that I bought, was the first numerical linear algebra text that I bought; Dianne O'Leary pointed it to me when I came to her with a question from an undergraduate research project I was involved in with another professor. The book was already The Book at that point; in fact, the book was conceived in the same year that I was born.

I first met both Charlie and Gene in 1999, when I applied to graduate schools. Charlie was just becoming chair then, and was chair for the entire seven years of my time in graduate school; a part of me will probably think of him permanently as “chair of CS at Cornell.” It was a delight to start interacting more regularly with Charlie when I arrived at Cornell in 2009, and for the past seven years he has been not a fantastic colleague, mentor, and friend.



H. Van der Vorst, "The Entertainer"



H. Van der Vorst, "The Entertainer"

I'll close with an image that many have used in this convergence, Henk Van der Vorst's linocut picture of Charlie. But Henk gives titles to all the pictures that he makes, and I don't think anyone has yet mentioned the title of Charlie's portrait: "The Entertainer." That clear and entertaining presentation style and his easy interaction with other people is a bit part of what makes Charlie so special and so effective, both at Cornell and within the community.