

Some Lessons I Have Learned

... or ...

“That's Life”

Daniel Berleant, June 20, 2011, University of Central Arkansas

A Few Words About My Research

- Wouldn't it be cool to make machines think??!
 - So, I pursued AI for my dissertation

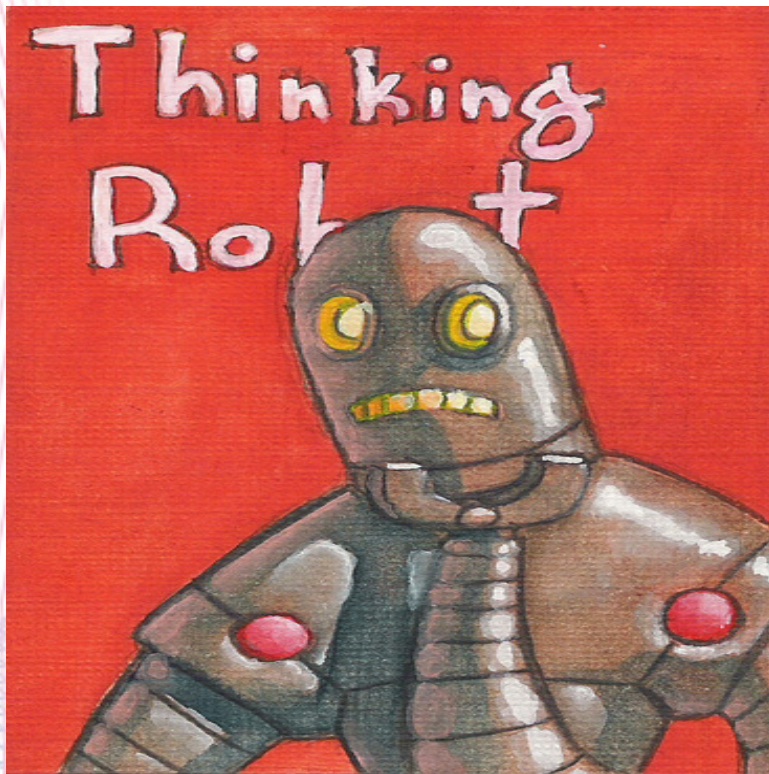


Image by Kyle Galbraith,
<http://www.elfwood.com/~kbriggs/Thinking-Robot.3512714.html>



Image:
<http://www.rocksandrobots.com/files/uploads/RobotIcon.jpg>

The Excitement of AI

- My AI work was in “Qualitative Physics”
 - It was interesting, it got me a Ph.D., but...
 - I learned little about how machines could think!

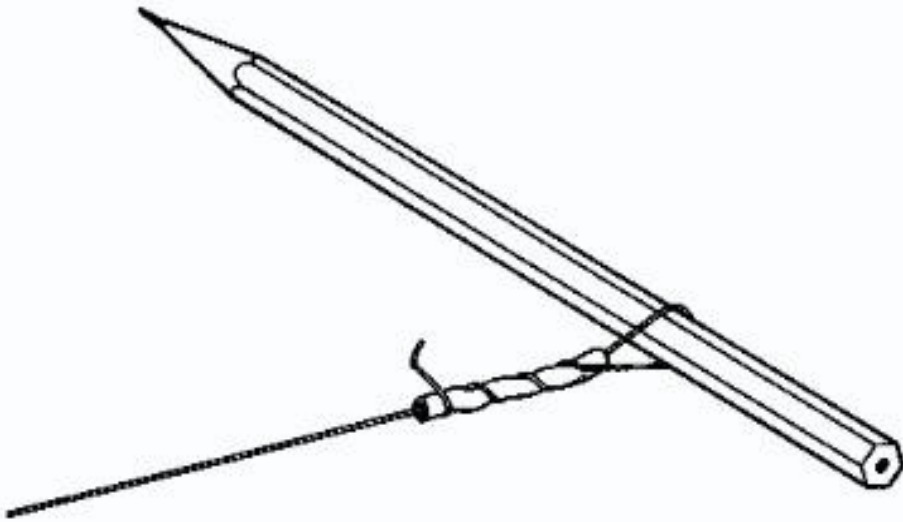
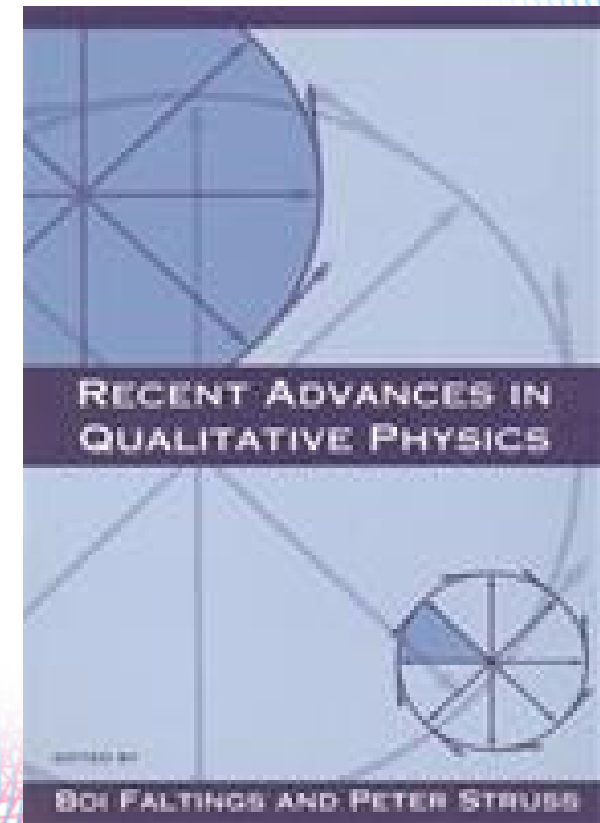
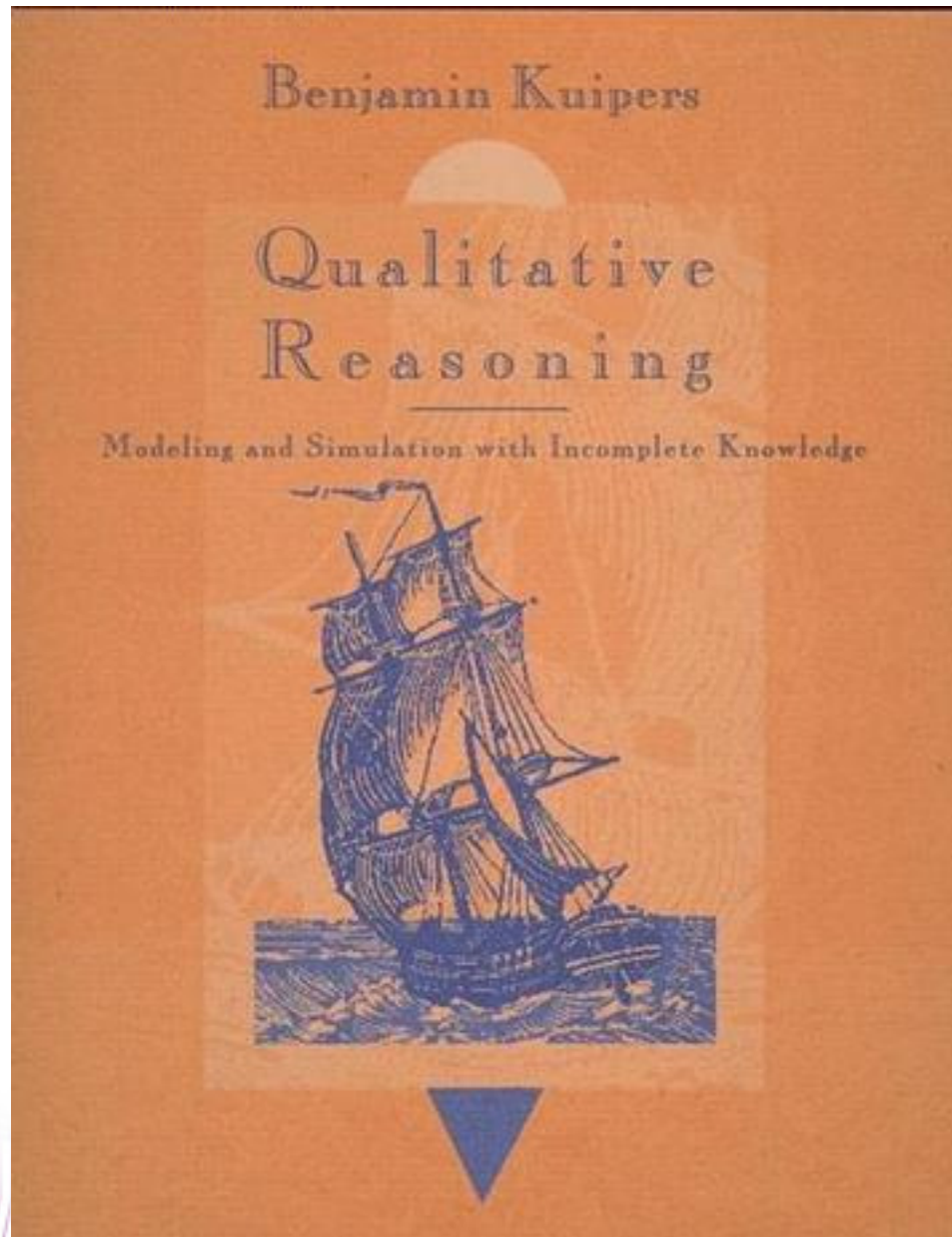


Image:
http://www.practicalphysics.org/go/Experiment_214.html



My Advisor Wrote this Book



Lesson #1: Share Authorship With Your Students

- When possible I put my students' names *first*
- Does this make my cv look worse?
 - L. Zhang*, D. Berleant, J. Ding, T. Cao, and E. S. Wurtele, "PathBinder - text empirics and automatic extraction of biomolecular interactions," BMC Bioinformatics, 10(suppl 11)(2009):S18, doi:10.1186/1471-2105-10-S11-S18.
- How about now?
 - Publications and other products ("*" indicates student author)
- In fact it makes my cv look *better!*

As a New Assistant Professor, AI was Hard to Work On

- Luckily, I branched out
 - Text mining got my first research grant
 - ...and colleagues that I still communicate with
 - Interval-valued probability
 - ...this tied into a very welcoming community
 - Life is a lot more fun when people are encouraging you!

Lesson #2: Sniff Out the Opportunities

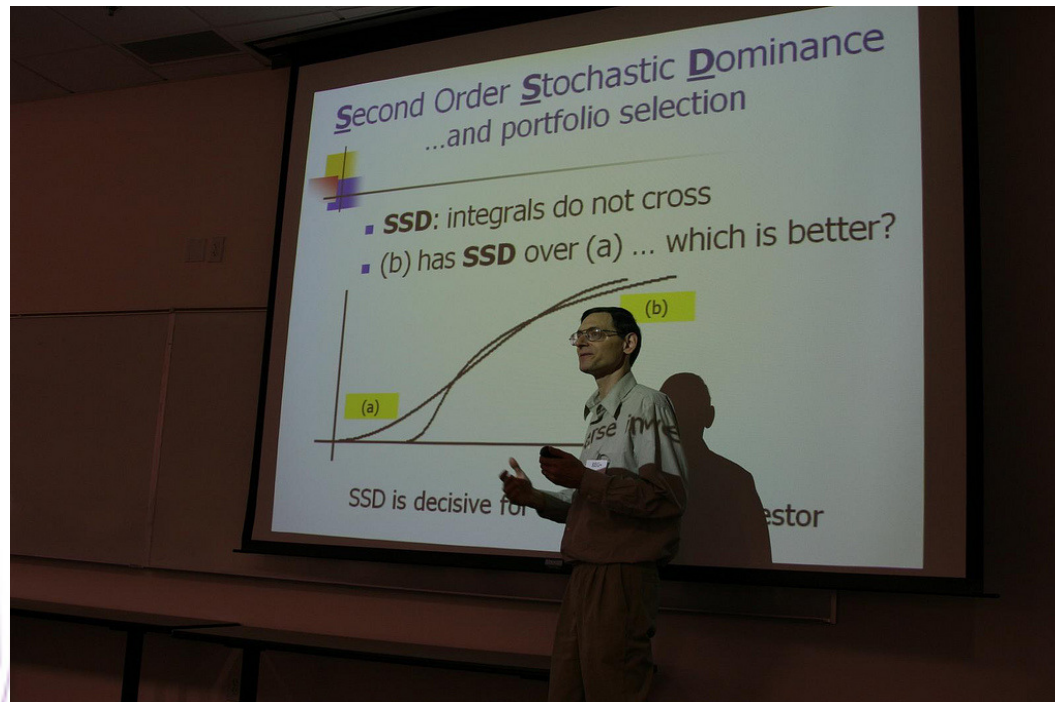
- Text mining:
 - Important in the early '90s
 - ...but a lot of people didn't realize it
 - Mid '90s – the Web was invented
 - ...suddenly, text mining heaven!
 - Late '90s – mining biomedical texts ramps up
 - ...an opportunity to join the bioinformatics field



Source:
<http://cores.montana.edu/index.php?page=bioinformatics-core-facility>

Lesson #3: Find Applications (even though it's not easy)

- Interval-valued probability:
 - Develop the theory
 - Find an application
 - Application demands new theory
 - Repeat!



Text Mining and Probability Intervals...isn't that too much?

- You can't do everything
- In most cases, focusing on one field yields the most progress and career success
- But it's risky!
 - You “put all your eggs in one basket”
- 1 ½ fields can be better in some cases
- But trying to do 2+ is probably a bit too much
- And now I am trying to do technology foresight...
 - *Why* ???!

Lesson #4: Know Your Drummer

- Some people “follow the beat of a different drummer”
- If 2+ fields is too much...why do it?



ipfw.edu/news/print-size-image.html?imgURI=/dotAsset/240216.jpg



http://www.cafepress.com/+because_its_there_sticker_oval,18626298



<http://www.rolex.com/en#/rolex-watches/explorerii/sir-edmund-hillary>

Lesson #5: The Grass is Always Greener on the Other Side of the Fence

- “If only I had done *that* instead of *this*, life would have been so much better” *sob*
 - Well, maybe...but maybe not! (what was that movie?)



Lesson #6: If You Don't _____, then You Won't _____



<https://www.ocps.net/cs/services/student/SSHS/Pages/WhyTry.aspx>



http://www.communicationultd.com/product_images/e/687/why-try__86870_zoom.jpg

- **Because...**

- If you don't work on important problems, you won't get important results
- If you don't write grant applications, you won't get any funds
- If you don't ask, you won't get, *etc.*

Lesson #7: There is Good Luck, and Bad Luck...You'll Get Both

- I have a one-off paper in a 3rd-rate conference that is well-cited
 - Someone referenced it in a wikipedia article
- My “best” papers have sometimes been cited few or no times
 - Aaaargh!!
- I have an IEEE Computer Society “Top Ten” paper that has been cited only once
 - What does *that* mean??!



Have a Great Day!

For another time: collaboration; Milankovitch approach to choosing the right question