Ask HN: What are your favorite scholarly papers? Why?

135 points by danielhughes 1010 days ago | hide | past | web | 86 comments | favorite

avinashv 1010 days ago [-]

Claude Shannon 1948, "A Mathematical Theory of Communication"
http://en.wikipedia.org/wiki/A_Mathematical_Theory_of_Commun...

This paper kickstarted the concept of information theory, and was hugely influential on many fields of research. Signal-to-noise ratio, the bit, information entropy, etc. are all theories and concepts presented by Shannon.

ivan_ah 1010 days ago [-]

+1! I find the whole notion of "typical set" to be absolutely amazing.

I would like to share with you a few pages from the intro to my thesis which cover Shannon's channel coding theorem. There are some nice TiKZ illustrations. http://minireference.com/static/excerpts/Shannon_channel_cod... (it's not super detailed, but the definitions of all the moving parts are given)

sasvari 1009 days ago [-]

> http://minireference.com/static/excerpts/Shannon_channel_cod...

in case somebody is interested in more than the 15 pages provided in the excerpt, here's ivan's complete thesis:

http://arxiv.org/pdf/1208.4188v1.pdf

swairshah 1010 days ago [-]

This is really cool. I'm working in systems research, but I'm fascinated by mathematical research in CS. Did you continue with similar work after your PhD, If I may ask?

ivan_ah 1009 days ago [-]

I've since switched my research focus to machine learning (look up *latent Dirichlet allocation*, very cool stuff). I find a lot of parallels between the two fields: prob. theory, matrices, uncertainty, ...

I'm still following quantum information theory research, but more as a spectator from the sidelines. However, a couple of weeks ago I had to come back to quantum info. theory to "defend" my academic reputation. Our colleagues from TIFR found a bug in one of our papers (http://arxiv.org/abs/1111.3645v3) so my coauthor and I had to fix it. It was kind of cool to see I hadn't "lost my quantum skills" after two years of running a business. I guess, once you go quantum you never go back? :)

avinashv 1009 days ago [-]

Very cool! Shannon's paper was, to be honest, a little out of my comfort zone when I first read it (this isn't really my field academically), and I got a little lost on the first read of this, but someone below posted your full thesis which I will definitely read when I have the time.

apricot 1010 days ago [-]

This was the first academic paper I ever read, way back when. For a brief, wonderful time, I thought all academic papers were of a similar caliber, and I was in awe (and not a little bit intimidated).

avinashv 1009 days ago [-]

> For a brief, wonderful time, I thought all academic papers were of a similar caliber

I had the exact same thought in college when I started reading a handful of well-written papers like this myself. This really set a standard that for 60+ years now academia hasn't always maintained.

thehoneybadger 1010 days ago [-]

Wow you beat me to it! This paper affected my college major, my career in my twenties, and my current career. Such an important paper, although, I must admit, it is not easy to decipher at first.

chromejs10 1010 days ago [-]

The papers published on the Google File System (GFS) and Map Reduce are still some of my all time favorite papers. It gives really good inside into how GFS/Map Reduce was built, but explains it in a very straight forward way. We actually implemented an in memory version of GFS/MapReduce in my graduate operating systems class. It remains as one of my favorite projects I've ever done.

http://research.google.com/archive/gfs.html

http://research.google.com/archive/mapreduce.html

nitishmd 1009 days ago [-]

That sounds like an interesting project to do in spare time. Can you link to the project description? or your universities class notes?

chromejs10 1009 days ago [-]

Yeah sure. Here is the project page:
https://sites.google.com/a/cs.usfca.edu/cs-636-2011s/project...

All notes and stuff can be found here:
https://sites.google.com/a/cs.usfca.edu/cs-636-2011s/schedul...

I learned a ton about MapReduce and GFS. It was a great learning experience.

nitishmd 1008 days ago [-]

great thank you!

alphaBetaGamma 1010 days ago [-]

Einstein, Albert. "On the electrodynamics of moving bodies." Annalen der Physik 17.891 (1905): 50.

http://ganapathymani.com/On%20the%20electrodymics%20of%20mov...

This paper establishes special relativity, and is remarquable for how clear it is, revolutionizing physics while using only elementary math. The first "Kinematical" part in particular does not use anything more complex mathematically than Pythagorus theorem. It is so clear that the explanations and though experiments are reproduced in *all* textbooks to this day; the only change is that textbooks include diagrams.

sytelus 1010 days ago [-]

I've attempted reading this paper about half dozen time and no, it's far from "clear". The language and description of the paper requires a LOT of context and understanding of 1900s state of world. There are quite a few "companians" that can help. Here's snippet from [1]:

Modern readers turning to Einstein's famous 1905 paper on special relativity may not find what they expect. Its title, "On the electrodynamics of moving bodies," gives no inkling that it will develop an account of space and time that will topple Newton's system. Even its first paragraph just calls to mind an elementary experimental result due to Faraday concerning the interaction of a magnet and conductor.

[1] http://www.pitt.edu/~jdnorton/papers/companion.pdf

pbsd 1010 days ago [-]

"Sequences of numbers generated by addition in formal groups and new primality and factorization tests", by the Chudnovsky brothers [1].

This paper is incredibly ahead of its time. While elliptic curves in cryptography are usually attributed to Hendrik Lenstra for destructive purposes (ECM factorization), and Koblitz and

Miller for constructive purposes in 1985, this paper contains almost everything relevant to *practical* curve-based cryptography long before everyone else. Highlights include:

- Hessian, Jacobian quartic, and Jacobian intersection curves, and derivation of respective fast addition and doubling formulas; they also comment on the value of unified addition formulas for simplicity.

- The "Montgomery" ladder for "x-only" Jacobian intersections: Peter Montgomery was directly influenced by this paper to produce his curves, and it is easy to see the resemblance.

- The idea of working in genus 2, and formulas for genus 2 Kummer surface doubling. Hyperelliptic curve cryptography was only later proposed by Koblitz in 1987. Almost 3 decades later, Kummer surfaces are now the fastest way to do scalar multiplication on beefy hardware.

[1] http://www.sciencedirect.com/science/article/pii/01968858869...

hnnewguy 1010 days ago [-]

As an economics undergraduate, Paul Krugman's paper on *The Theory of Interstellar Trade* was a must read, exclusively for its light-heartedness:

https://www.princeton.edu/~pkrugman/interstellar.pdf

(12 pages, quick read)

jgmmo 1010 days ago [-]

Came here to say this. It really is awesome; and I hate Krugman!

It's really an interesting situation; thinking about how there would no longer be an 'unambiguous' measure of time when we have faster than light travel.

hnnewguy 1010 days ago [-]

>and I hate Krugman!

I try to separate academic Krugman from New York Times Krugman. It helps.

tormeh 1009 days ago [-]

Why do all of you seem to hate Krugman?

hnnewguy 1009 days ago [-]

>Why does all of you seem to hate Krugman?

I don't. I have much respect for the man.

But his NYT writings can sometimes lean towards what might be described as "left-wing blowhardism".

wittedhaddock 1010 days ago [-]

But it's so hard!

ci5er 1010 days ago [-]

I hate NYT Krugman too, but this was excellent: - http://web.mit.edu/krugman/www/ricardo.htm

cmrx64 1010 days ago [-]

William P. Thurston 1994, "On proof and progress in mathematics"

Gives a good amount of insight into how academia works for mathematics, and gives a good contrast with how CS works. Don't be scared by the abstract, it's a completely non-technical paper. The academic/research culture can be more important than the results.

http://arxiv.org/abs/math.HO/9404236

bdcs 1010 days ago [-]

In the vain of generally appreciated papers, I really like "Whitesides' Group: Writing a Paper" by George Whitesides[0][1]. It gives a strategy for collaborating research based on using a paper as a living document. It seems like a lot of work, but it saves untold days in the long run. This is the first paper I give anyone I mentor.

There have been derivative works on giving presentations, that I also particularly like: Editorial: Effective Presentations—A Must. [2]

[0] In case you don't know of him: he is the most cited living chemist, or something to this effect

[1] http://onlinelibrary.wiley.com/doi/10.1002/adma.200400767/ab...

[2] http://onlinelibrary.wiley.com/doi/10.1002/anie.201209795/ab...

walterbell 1010 days ago [-]

Link: http://www.ee.ucr.edu/~rlake/Whitesides_writing_res_paper.pd...

alphaBetaGamma 1010 days ago [-]

Watson, James D., and Francis HC Crick. "Molecular structure of nucleic acids." Nature 171.4356 (1953): 737-738.

http://www.nature.com/physics/looking-back/crick/index.html

Partly because of the fundamental importance of the paper, elucidating the structure of DNA; partly for the wonderfully understated third to last paragraph: "It has not escaped our notice that the specific pairing we have postulated immediately suggests a possible copying mechanism for the genetic material."

EthanHeilman 1010 days ago [-]

Stephen Jay Gould and Richard C. Lewontin, 1979 "The spandrels of San Marco and the Panglossian paradigm: a critique of the adaptationist programme"

Some biologists may cringe (especially the Gould haters), but I don't think I've ever been so engrossed by any other scholarly paper. It is a joy to read. Very approachable for non-biologists. The papers critique of sloppy "just so" reasoning, could easily be extended to Data Scientists/Engineers/Entrepreneurs. Highly recommend!

lambdaphage 1009 days ago [-]

I am cringing. Gould was a classic case of projection, having been guilty of everything he accused his opponents of: misreading one's opponents, proneness to ideological bias, and experimental technique so sloppy that deliberate fraud starts to look like the simpler explanation. (http://www.plosbiology.org/article/info%3Adoi%2F10.1371%2Fjo...)

There are other bones to pick with Gould, but these are the ones that make him impossible to read as an interested layperson without personally verifying every sentence.

DenisM 1010 days ago [-]

Related comic strip about adaptationism: http://www.smbc-comics.com/?id=2713

the_why_of_y 1009 days ago [-]

"On Understanding Types, Data Abstraction, and Polymorphism" (Luca Cardelli, Peter Wegner) http://lucacardelli.name/papers/onunderstanding.a4.pdf

Very nice intro to type systems.

"A Language-based Approach to Unifying Events and Threads" (Peng Li, Steve Zdancewic) http://www.cis.upenn.edu/~stevez/papers/LZ06b.pdf

For showing that if you have a sufficiently powerful programming language, the answer to the question "async events or multiple threads?" can be "the best of both worlds".

"The Private and Social Costs of Patent Trolls" (James Bessen, Jennifer Ford, Michael Meurer) http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1930272

If you ever wondered exactly how much wealth is destroyed by the US patent system, this paper provides some educated guesstimates.

tel 1009 days ago [-]

Koen Claessens's *A Poor Man's Concurrency Monad* [0] is perhaps easier reading than Li and Zdancewic here.

[0] http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.39.8...

e12e 1010 days ago [-]

I'm not quite sure what's meant by "scholary papers", but I really enjoy(ed) Fielding's Ph.d thesis on "REST":

http://www.ics.uci.edu/~fielding/pubs/dissertation/top.htm

Mostly because, it's not actually about just REST, but the way he derives REST as a reasonable approach to architect hypermedia/hypertext "applications" (In quotes, because, he's not really talking about "web apps" -- he mentions some other patterns that *do* describe "web apps" though).

I have the impression few people read and understood his paper, and run around with REST like others run around with MVC. Which brings us to:

Trygve M. H. Reenskaug's "MVC" (neé Model-View-Controller-User):
http://heim.ifi.uio.no/~trygver/themes/mvc/mvc-index.html

and, newer, less known: "DCI - A new Role Based Paradigm for specifying collaborating objects":

http://heim.ifi.uio.no/~trygver/themes/babyide/babyide-index...

I think that sums up the "papers" I generally refer back to, and find myself frustrated that so few people seem to have read and/or understood. Which leads to strange discussions and unhealthy re-inventions and "improvements".

Oh, I really enjoy some of the work of VPRI/Alan Kay -- but they've been rather thin on useful papers, as far as I can tell. I did enjoy a paper on Croquet's TeaTime protocol/world model -- but sadly I can't seem to find it... hang on, I think it might be this one here:

"Designing croquet's TeaTime: a real-time, temporal environment for active object cooperation":

http://dl.acm.org/citation.cfm?id=1094861

All less impressive than Shannon, Einstein, Knuth etc... but I really find those interesting.

> stiff 1009 days ago [-]
>
> The REST thesis, whatever merit it may otherwise have, is also a prime example of the academic style of writing going horribly wrong, though. You could communicate the important novel points of this text in 5-10 pages of clear prose, instead the thesis goes on and on and bathes in vague generalities, introduces lots of jargon that contributes little and so on. It reads like something from the philosophy department, or the kind of writing that Orwell mocks in "Politics and the English Language". This is the reason why to this day many people who use the term REST do not really understand what it means. Compare it to how Watson and Crick communicated their fundamental discoveries:
>
> http://www.nature.com/nature/dna50/watsoncrick.pdf
>
> > e12e 1009 days ago [-]
> >
> > I don't agree. *If* the point was to only document REST (and not the other architectures) -- then yes, it could have been a lot shorter. I think it gives a good overview of architectures in general, and ways to look at and analyse software. This way it makes a much better argument for REST -- and contrast it with other styles in common use at the time (and to a lesser extent, today).
> >
> > I also don't think it is particularly wandering or obtuse.
> >
> > > It reads like something from the philosophy department
> >
> > Well, it is titled for "doctor of philosophy" ;-) (in Information and Computer Science).
> >
> > BTW, how long is that DNA article? A cursory search only reveals articles that are cut off on the second page (at "inner-").
>
> > deong 1009 days ago [-]
> >
> > Everyone I know with a PhD has a 10-page journal article they recommend you read instead of the thesis. For whatever reason, this is the way PhD theses tend to work these days.
>
> > > dmd 1009 days ago [-]

My PhD thesis (U of Penn, cognitive neuroscience) *is* two of my 5 page journal articles, stapled together, with an introduction and conclusion added on mostly as an afterthought. I'm not sure why other schools don't do the same.

deong 1006 days ago [-]

I do get why some people dislike the sandwich thesis. From the standpoint of providing evidence that you deserve the PhD, it's fine. We judge research performance by published papers, so publish two or three good ones, print them out, and graduate.

If we're talking about the quality of the actual thesis as a separate document that has value on its own, the sandwich thesis isn't great though. No one would argue that it needs to be an entirely separate piece of work from your papers, but there's a legitimate case for requiring it to be pretty heavily edited into something resembling a book rather than a collection of articles on the same topic.

lbradstreet 1010 days ago [-]

I'm not going to mention a specific paper, but Papers We Love (https://github.com/papers-we-love/papers-we-love) has some good stuff on it, and the meetups have always been interesting (at least for my local chapter).

damurdock 1010 days ago [-]

Since someone already posted "Spandrels", I'll go with "How Not to be a Bioinformatician" by Manuel Corpas, Segun Fatumo, and Reinhard Schneider[0]. It's a humorous takedown of very common problems in Bioinformatics. I think the point comes across better when you say "if you do X, you are doing poorly" versus "don't do X if you want to do well". Plus, it's a little cathartic.

[0] http://www.scfbm.org/content/7/1/3

boyaka 1010 days ago [-]

Above the Clouds: A Berkeley View of Cloud Computing

http://www.eecs.berkeley.edu/Pubs/TechRpts/2009/EECS-2009-28...

I've been attempting to write a paper on virtualization and other Cloud/datacenter machine managing software. This was one of the first papers I read in my Cloud Computing class, and I actually recently came back to it after becoming lost reading countless papers on more specific cloud research. It really clears up a lot of confusion on terminology regarding different forms of computing services and the challenges in the field. I wish I knew from the start how much more accurate the statements in this paper are compared to a lot of other content out there, and that I could have been warned about how misleading that other content would be due to authors trying to validate their own software creations.

Before I came back to it, I was playing with the thought that the cloud is really just corporatization of computing resources that only leaves the biggest players to survive because of profits, which really vibes with this paper. It really is just computing infrastructure as a utility and the idea is nothing new. There are several other papers out there that make the same points, but I appreciate this one for really nailing the practical terminology without any sort of vagueness. It's not surprising that it is such a highly referenced and popular paper.

0xdeadbeefbabe 1010 days ago [-]

"Suppose it is the 1890s. Artificial flight is the glamor subject in science, engineering, and venture capital circles." -Intelligence without representation by Rodney Brooks http://people.csail.mit.edu/brooks/papers/representation.pdf

It's accessible, and it's a good intro to thinking about AI. The field oughta be called even more nifty algorithms.

seanmcdirmid 1010 days ago [-]

Also, see elephants don't play chess:

http://people.csail.mit.edu/brooks/papers/elephants.pdf

dikek 1010 days ago [-]

Not tech related but...

Uncertainty and the Welfare Economics of Medical Care by Kenneth Arrow (1963) [1].

This paper effectively makes the case that medical care shouldn't be treated like other goods.

If you're remotely interested in health econ/health industry, I recommend reading it.

1. https://www.aeaweb.org/aer/top20/53.5.941-973.pdf

nooron 1010 days ago [-]

Big fan. Have you read Norm Daniels' Just Health? It's a riff off a Rawls/Social Contract world view, and it really spoke to me.

dikek 1010 days ago [-]

It has been on my list of books to read since I saw it on the Incidental Economist blog years ago. Thanks for giving me the push I needed to read it.

nooron 1002 days ago [-]

My pleasure. Shoot me an email at jordan at birnholtz dot com if you'd like any notes or supplementary texts (or just a friendly chat about the subject).

tempestn 1010 days ago [-]

Common risk factors in the returns on stocks and bonds (1993)

http://rady.ucsd.edu/faculty/directory/valkanov/pub/classes/...

The foundation of the Three-Factor model, which shows how market returns can be very accurately described using exposure to market, small, and value factors (as well as term and default factors, primarily used for fixed income). The foundation of modern value investing.

A Stand-Alone, Split-Phase Current-Sourced Inverter With Novel Energy Storage

http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=468271...

There's nothing particularly special about this paper except that it was accepted by IEEE Transactions on Power Electronics and I wrote it. :P

jasoncrawford 1010 days ago [-]

The Mundanity of Excellence: http://lillyfellows.org/Portals/0/Chambliss-Mundanity%20of%2...

A study of competitive swimmers and what separates the mediocre from the great, but widely applicable to many forms of excellence or greatness.

rgacote 1010 days ago [-]

"The Letter S" by Donald E. Knuth. An entire paper on the typographical design of the letter S and variants based on type size and other attributes. An elegant paper on a single letter:

http://link.springer.com/article/10.1007%2FBF03023051#page-1

seanmcdirmid 1010 days ago [-]

It is a sad tragedy that this article is not freely available on the web (at least as I can find).

vixen99 1009 days ago [-]

Come on, $39.95 / €34.95 / £29.95 isn't much and I am sure Springer deserve to cash in on Knuth's work.

seanmcdirmid 1009 days ago [-]

I can't tell if you're serious but...I can get it for free if I just wait to be in the office tomorrow (we subscribe to springer). If I remember that is.

However, many people here are not going to pay the money or have access through their employer, and will miss out. Free Knuth!

cmrx64 1010 days ago [-]

(Almost?) none of Knuth's work is. It's really unfortunate.

SoftwareMaven 1010 days ago [-]

Perhaps not quite what the OP had in mind, but I found the papers that affected my life the most were not in my chosen profession.

Comparison of the Atkins, Zone, Ornish, and LEARN Diets for Change in Weight and Related Risk Factors Among Overweight Premenopausal Women[1] and *Low-carbohydrate nutrition and metabolism*[2]. After spending most of my life obese, even after having bariatric surgery to "correct" it, I found I had to dive into the science on my own to see past the charlatans and the demagogues. These two papers lit the way for me.

1. http://jama.jamanetwork.com/article.aspx?articleid=205916

2. http://ajcn.nutrition.org/content/86/2/276.full

DenisM 1010 days ago [-]

Optimistic Replication - YASUSHI SAITO & MARC SHAPIRO, 2005 http://pagesperso-systeme.lip6.fr/Marc.Shapiro/papers/Optimi...

Why: RPC and its ilk make a lousy model for mobile data, since mobile devices are only occasionally connected, not permanently. Similarly, in the face network and server failures, servers can be modeled as occasionally connected as well. The "replication" mindset is far more productive when dealing with those issues. The linked paper gives a broad overview of a great number of approaches to replication, and is a great way to get the lay of the land.

walterbell 1010 days ago [-]

Xerox PARC, *Epidemic Algorithms for Replicated Database Maintenance*, 1989

http://www.bitsavers.org/pdf/xerox/parc/techReports/CSL-89-1...

mathattack 1009 days ago [-]

The cross section of expected returns.

http://www.bengrahaminvesting.ca/Research/Papers/French/The_...

It simultaneous disproves one notion of efficient markets, and shows how passive indexes can explain most so-called active management. (Much of VC outperformance is explained by the size factor, and much of private equity outperformance is explained by the value factor, both of which can be passively invested in)

hchenji 1010 days ago [-]

Not tech related, but this paper on an urban movement in India: "Urban Upheaval in India: The 1974 Nav Nirman Riots in Gujarat"

It gives insight into the nexus between politics and student unions/student bodies in India. It reads more like a story than a scholarly article.

http://www.jstor.org/discover/10.2307/2643482?uid=3739536&ui...

rweba 1009 days ago [-]

"Can a biologist fix a radio?"

http://www.protein.bio.msu.ru/biokhimiya/contents/v69/pdf/bc...

Funny and inspirational, and shows how primitive a lot of biological research really is: Almost randomly try a bunch of things and take note of anything that has any effect. Lather, rinse, repeat.

bootload 1009 days ago [-]

'The Chemical Basis of Morphogenesis', Alan Turing.

The last paper written by Alan Turing, "The Chemical Basis of Morphogenesis," [0] attempted to answer the theoretical explanation of the biological process that defines the shape of an embryonic organism from creation. This process is called "Morphogenesis". This is an important problem because complex organisms appear to be created by some "random" process that organises what appear to be self similar cells.

A lot of recent work has been done to experiment Turings ideas on "reaction-diffusion" processes describing morphogenesis in biology and other natural systems to see if a) they can be reproduced in the lab and b) mathematically model them. [1]

There is a pretty good broad outline of Turing and Morphogenesis in a BBC documentary, "The Secret Life of Chaos" [2] by Professor Jim Al-Khalili on Youtube. [3]

[0] Alan Turing, "THE CHEMICAL BASIS OF MORPHOGENESIS, http://www.dna.caltech.edu/courses/cs191/paperscs191/turing....

[1] Brandon Keim, Wired, "Alan Turing's Patterns in Nature, and Beyond" http://www.wired.com/wiredscience/2011/02/turing-patterns/?p....

[2] Jim Al-Khalili, "The Secret Life of Chaos" http://www.bbc.co.uk/programmes/b00pv1c3

[3] Jim Al-Khalili, "The Secret Life of Chaos" http://www.youtube.com/watch?v=uF7gdlTrCQY

privong 1009 days ago [-]

Toomre and Toomre, 1972, "Galactic Bridges and Tails". http://adsabs.harvard.edu/abs/1972ApJ...178..623T

This paper addressed the question of how galaxies with bridges and tails were formed. It used a series of simulations with gravitationally interacting point masses and associated test particles to represent the disks of two galaxies. It was one of the first papers to convincingly demonstrate that gravitational tidal interactions can create the narrow "tails" seen extending from some galaxies (others had argued that gravity could not make such narrow tails and argued for magetic fields).

This paper also speculated that gravitational interactions between galaxies could result in an increase in the amount of gas at the centers of galaxies and possibly explain the enhanced rate of star formation and supermassive black hole growth seen in some galaxies galaxies.

exratione 1010 days ago [-]

If we define favorite as most often reached for in reference to present discussions, then probably this. People are persistently surprised by the expected results of cumulative gains in all areas of life, here also:

http://dx.doi.org/10.1371%2Fjournal.pbio.0020187

"Those who get first-generation therapies only just in time will in fact be unlikely to live more than 20–30 years more than their parents, because they will spend many frail years with a short remaining life expectancy (i.e., a high risk of imminent death), whereas those only a little younger will never get that frail and will spend rather few years even in biological middle age. Quantitatively, what this means is that if a 10% per year decline of mortality rates at all ages is achieved and sustained indefinitely, then the first 1000-year-old is probably only 5–10 years younger than the first 150-year-old."

aaron695 1010 days ago [-]

"Thirty years of research on race differences in cognitive ability" http://psychology.uwo.ca/faculty/rushtonpdfs/PPPL1.pdf

It made me realise how political science can be and how facts on large issues can be covered up for political reasons.

tokenadult 1010 days ago [-]

It made me realise how political science can be and how facts on large issues can be covered up for political reasons.

You mean all the facts that Ruston left out made you realize that? I hope that's what you mean, as that paper is a dog.

Here's a better paper on closely related topics, by authors who have advanced the research considerably:

Nisbett, R. E., Aronson, J., Blair, C., Dickens, W., Flynn, J., Halpern, D. F., & Turkheimer, E. (2012). Intelligence: New findings and theoretical developments. American Psychologist, 67, 130-159.

doi:10.1037/a0026699

http://people.virginia.edu/~ent3c/papers2/Articles%20for%20O...

aaron695 1009 days ago [-]

The paper is not perfect, but it let me question the reality of the world around me and how much was real and how much was constructed.

I find papers that challenge my ideas more enlightening than ones that reinforce them. Which obviously makes sense I guess.

The paper I linked I considered reputable enough, in a topic known to be difficult, to be of note. Every paper has issues, the trick is working out if the issues kill the paper or not.

stonogo 1010 days ago [-]

"On the Relative Motion of the Earth and the Luminiferous Ether" (https://www.aip.org/history/gap/PDF/michelson.pdf)

This paper achieves a wonderful balance between being incredibly important and almost absurdly easy to read and understand.

koddsson 1010 days ago [-]

Joe Armstrong 2003, "Making reliable distributed systems in the presence of software errors" https://www.sics.se/~joe/thesis/armstrong_thesis_2003.pdf

rhodin 1010 days ago [-]

Attended his defense of this, it was a ton of fun! "Defending the thesis"-slide had Joe, sword in hand, defending the thesis against a comic-styled dragon.

wkmeade2 1010 days ago [-]

John Platt "Strong Inference" SCIENCE 16 October 1964, Volume 146, Number 3642

How to think/discover with maximum advantage. A jewel of an article, the most photocopied SCIENCE article I've ever encountered in library stacks. Foundation to methodological adventures.

b_emery 1006 days ago [-]

http://pages.cs.wisc.edu/~markhil/science64_strong_inference...

drjesusphd 1009 days ago [-]

Einstein, "On the electrodynamics of moving bodies"

https://www.fourmilab.ch/etexts/einstein/specrel/www

It's remarkably accessible and clear (at least Part I is).

rom16384 1009 days ago [-]

I found these two papers very eye-opening. They talk about the limitations of reductionism in science.

P.W. Anderson, "More is different", https://www.tkm.kit.edu/downloads/TKM1_2011_more_is_differen...

R. B. Laughlin and D. Pines, "The theory of everything", http://www.pnas.org/content/97/1/28.full.pdf&embedded=true

agopinath 1010 days ago [-]

Quantum random number generation on a mobile phone (2014)[1]

A topic which seems at first rather obscure overlaps with something relatable to yield a fascinating result. The blog post [2] was especially enticing for non-specialists like myself.

1. http://arxiv.org/abs/1405.0435

2. https://medium.com/the-physics-arxiv-blog/quantum-random-num...

eli_gottlieb 1009 days ago [-]

Favorite PL paper for balancing practicality and theory: http://ropas.snu.ac.kr/~bruno/papers/TypeClasses.pdf

Favorite paper/dissertation for sheer simplicity, elegance, and far-reaching power of the approach to the problem: http://web.mit.edu/vkm/www/vkm-dissertation.pdf

teekert 1009 days ago [-]

"Hallmarks of Cancer: The Next Generation" http://www.cell.com/cell/pdf/S0092-8674%2811%2900127-9.pdf A paper that gives a nice frame of reference for understanding and talking about the biology of cancer. This paper is the follow-up of the original Hallmarks of cancer by Hanahan and Weinberg (2000).

karmacondon 1010 days ago [-]

A paper about making video game characters act more like real people, trained by having people simulate interactions in a restaurant setting.

http://www.media.mit.edu/cogmac/publications/orkin_aamas2009...

Not ground breaking by any means, but it's the only time I've genuinely laughed out loud when reading a paper.

> e12e 1010 days ago [-]
>
> Oh, this reminds me of Bartle's "HEARTS, CLUBS, DIAMONDS, SPADES: PLAYERS WHO SUIT MUDS":
>
> http://mud.co.uk/richard/hcds.htm
>
> Much for the same reason I like Filedings REST thesis (see other comment in this thread): the reasoning that goes into it. The "types" have since been "debunked" -- but IMNHO that sort of misses the point: that he has an interesting way of looking at what makes a game fun, and how things like lack of automapping can stimulate player communication.

jMyles 1010 days ago [-]

Some of the trippiest math I've ever seen. I sat with one of the authors while he wrote pecked out parts of his contribution. Smoking a bong. He's 83.

Completely dissociative groupoids. http://mb.math.cas.cz/mb137-1/6.html

austinbirch 1007 days ago [-]

"Out of the Tar Pit" (Ben Moseley and Peter Marks)
http://www.curtclifton.net/storage/papers/MoseleyMarks06a.pd...

Software complexity related to mutable state.

pratiksaha 1010 days ago [-]

"The Complexity of Songs" by Donald Knuth Mostly because it is an interesting read
http://en.wikipedia.org/wiki/The_Complexity_of_Songs

ShinyElena 1007 days ago [-]

t seems to me that you are trying to create a formula of successful scholarly paper. The success depends on the uniqueness. But it's hard to write good paper without using cliché or other writers' works. Here is http://myessaywritersonline.com/ a reliable original essay writing service that provides with all the required tools and knowledge to perform a high-end college essay, as well as samples of the best essay papers, it worth visiting!

Naga 1010 days ago [-]

For something completely different, Amelia Rauser, "The Butcher-Kissing Dutchess of Devonshire: Between Caricature and Allegory in 1784." Eighteenth-Century Studies 36 (Fall 2002): 23-47.

> unclesaamm 1010 days ago [-]
>
> Can you explain the meaning of this paper to you?

dajohnson89 1009 days ago [-]

Two Dogmas of Empiricism, by W.V.O. Quine.

http://en.wikipedia.org/wiki/Two_Dogmas_of_Empiricism

e12e 1010 days ago [-]

I'm a little surprised no one has mentioned a category theory paper yet. I'm hoping one will pop up ;-)