

Let's chat on Hangouts!

Alex • 12/20/19, 2:05 PM

Just received the invitation after I put in your email.

Feb 28, 6:01 PM



thank you so much

You're welcome



how have you been?

Doing school mostly.



I got invited to a computer assisted geometric design conference since we talked...

That's awesome. Do you need me to look at anything?



I've been all over the place. I'll think of what questions to ask you.

Sounds good. Let me know. I'm now getting your messages immediately with Hangouts.



I'm not sure how much I told you when we first talked. You are familiar with spline interpolation very generally?

Generally, yes. Like from numerical analysis? We were talking about orthogonal polynomials last time...



yes...

splines used to have different meanings in math a few decades back

linear splines i.e. piecewise polynomial interpolation

Right.

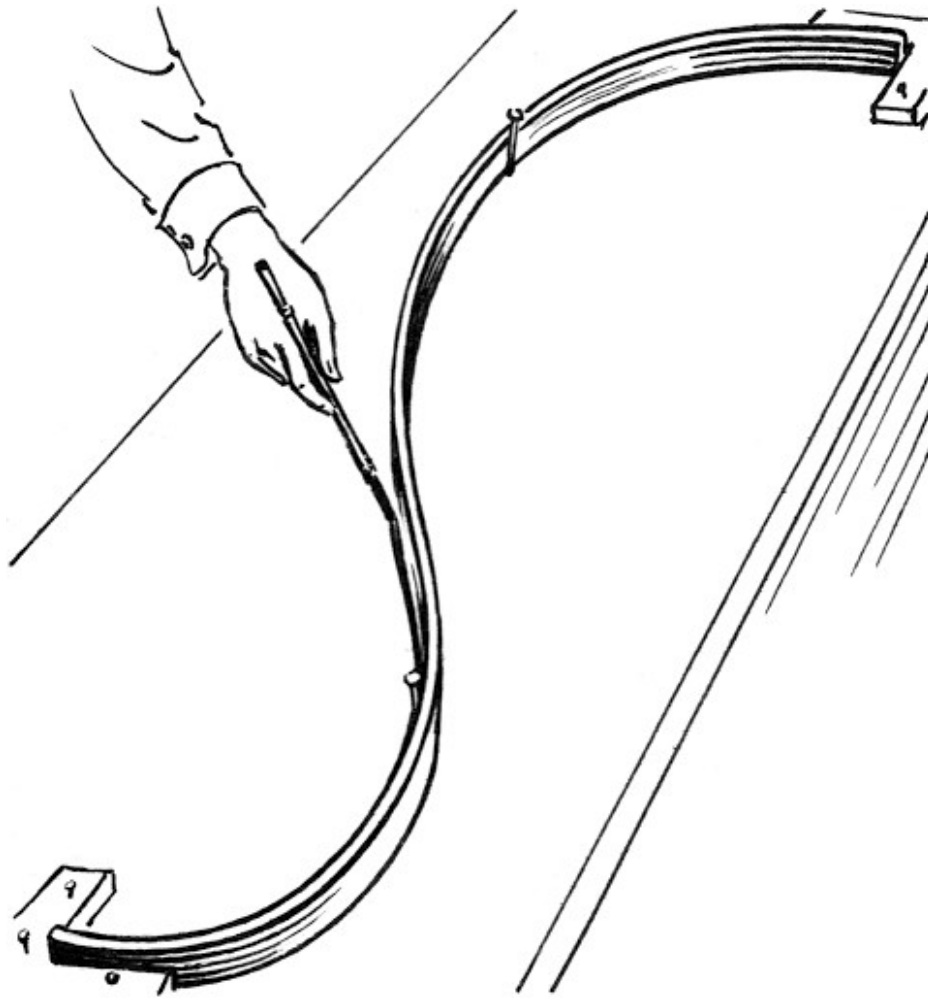


and non linear splines i.e. piecewise spiral interpolation closer to nature

Or cubic is what I've seen...



yeah that's the most common academic one



this is a mechanical spline

Ok. Can you send me a write up of what you think I can look at for you? Or just describe it here is fine.



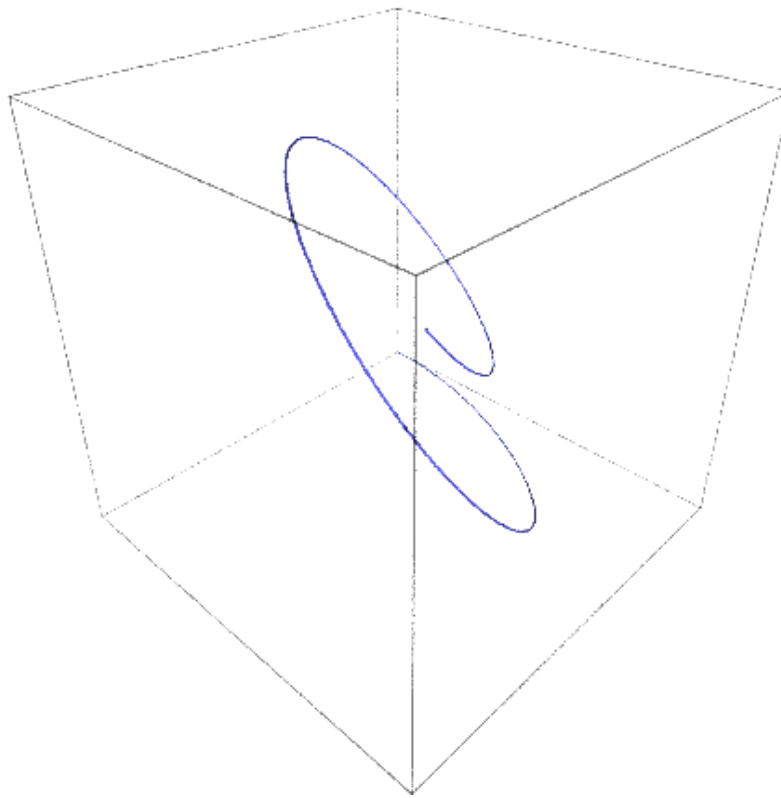
I'll send you a write up with a summary of what I've been doing with my team



I ultimately want to compute the egf of a sequence defined by a recurrence relation

with arbitrary precision, fast

I've been playing around in sagemath a lot



I use this function to draw this curve

it's a generalization of the euler spiral

I'm good with Python. Have written a SageMath package before. Is that what you're eventually going to want? A SageMath package?



my ultimate goal is new aesthetic 3d interpolation algorithms using pieces of the 3d spiral I am building

that will closely emulate pieces of wood or spring steel pinned to points in 3d space

I will see what I can do once you send me a write up. I am going to be very busy through the end of March with exams. After that my time frees up.



how are you doing with coursework?

how have you been?

Ok with coursework. I have one more comprehensive exam to pass in probability. It was put off until the end of next month due to some illness I had at the end of December.



I'm sorry to hear that

are you feeling better?

this is the conference I got invited to btw:

10th International Conference on Mathematical Methods for Curves and Surfaces  
[www.mn.uio.no/MMCS10](http://www.mn.uio.no/MMCS10)

Should go well I expect. It's just an obligation I have to keep studying for the exam. Keeping myself sharp on the material.

Yes. Feeling much better now.



so happy to hear that

I'm fucking done with coursework in my life it feels like

I worked in industry for a few years and can't imagine going back to the exam paradigm

When should I expect to hear back from you with a more detailed write-up?





give me maybe 48 hours, I've been putting it off because of new findings

I'll be honest with you, ever since one of the organizers invited me... (after showing preliminary geometry work) it's been a bit stressful

sort of balancing research and deciding what to write-up, present

because I don't have a finished algorithm yet, just partial results

would you like to skim some papers inspiring some of my work?

as context, or just stick to questions I am facing right now?

Let's just stick to what you are doing right now

Like I said, I'm kind of tied up until the start of April. After that we can talk generalization.



I sent you 2 papers with a note that you can check them out in April

Ok. Talk to you soon with the write up



awesome, I'll make it my top priority

last question, are you any good with numerical analysis?

I have a MS in computer science if that's what you're asking... I can figure out what I don't know off hand pretty quickly I think (have enough background to do so)...



your background is so perfect to help out

we already have 2 old differential geometers in the team so you have a very different skillset

plus you know what an EGF is...

Yes, I have some extra math expertise to bring to the table.



we can be co authors on the conference paper for June, I'll forward the write-up to Robert Lewis too when I am done

he is the main geometer

Ok. I have done some geometry work on gap distributions on tilings. The python code is pinned in my GitHub page.



I must be a python and sagemath noob compared to you

Python is easy to learn...



it's too easy, I got so comfortable now I'm afraid I forgot how to type stuff, allocate memory...

That's the beauty of Python. You don't need to go as low level as c/c++, unless you need to, in which case it's there!



I fear my mathematical physics fanaticism for fortran is dieing down

Yeah, well.

I have some other things to tend to. Can I talk with you in a few days?



sure thing, good luck with your other work

Feb 28, 7:01 PM



hi sorry for the write-up delay, I've been stuck in meetings with my main investor...

That's fine. I told a friend who is better in numerical analysis about it. He also needs papers. Is that ok?



that is great!

I need a numerical analyst!

this is the one thing missing in my crew

Most mathematicians make good numerical analysts... I will pass the paper along to him when you send it.



that's very philosophical

have you or your friend ever worked/used splines?

another question for you both, how comfortable are you with quaternions?

I can tutor him...



ah good

Quaternions for me, no. Him probably is better at the algebraic stuff.



I sent you a drawing that illustrates a nonlinear spline in 2D (this has been done already...)

I want to draw pretty curves like those on the sphere  $S^2$  and later  $R^3$

Ok.



what is done in the picture in 2d, I want to do in 3D

I have an expression for the family of curve primitives (3d spirals) and I need to find the best ways to compute estimates fast and then piece together the segments

Do you have funding? To be honest most qualified undergrad math majors can handle this. If you can pay a RA like my adviser does, you can get much more done...



It's very novel mathematically

I'm happy to help with specialized orthogonal polynomials, but general numerical analysis is easy to find.



it's a can of worms

I have a master's in math and worked more in CS, physics in industry

this is why I am invited to an applied math conference in Norway...

If you can put together enough funding for a RA position at GA Tech, I guarantee I can find you someone that will be perfect for the job.



I believe you.

I have like 3-4 steps to build the algorithm

only the part dealing with EGF of orthogonal polynomials interests you personally?

I'm going to be writing a thesis after my exam. I gave enough energy to get a paper going, but it seems like you need a specialist mathematician. I could have done most of this as an undergrad... You need to find the right motivated person to help with your projects in general.





I'll try to put what I found succinctly. I found your paper originaly for OGF to EGF transforms (the proofs of Knuth etc.

This isn't a comment on physicists skill sets. More pointing out that there are a lot of smart math people at large universities.



yes I got it

No I will look at the orthogonal polynomials bit. But my time is constrained.

Mar 5, 8:28 PM



I completely understand

anyway, nobody can promise anything for research IMO

I can promise that it is novel work

what I meant to say was that I used your paper for an integral form of certain functions I need

but since then, I've developed a quaternionic integral form, other expressions with my Geometer so the roadmap changed a bit

however if you still want to glance over the original EGF's of Meixner Pollaczek polynomials, maybe you can see something

I sent you an email with the generating functions of orthogonal polynomials that arise in my problem (with applications to quantum physics and 3d graphic design)

(and differential geometry...)

please pardon my ignorance for the potentially stupid question

Sorry. Started talking to my neighbor. Wasn't listening for a bit.



take your time

Alex • Mar 5, 8:54 PM

I'm good with generating function identities. I might be able to see something. Happy to take a look.

Mar 5, 9:21 PM



I was asked to submit art work for BRIDGES math-art in Finland

this is what I made last minute, all in sage math with segments of the curve I have been studying and ray traced with tachyon

(also included in sagemath)

Nice.



thank you!

do you like the image?

It's nice.



do you like visual art?

Sometimes.

Are you located in Germany?



I'm in Montreal, Canada now but I'm originally from Romania.

Why did you guess Germany?

I am curious

I just guessed.



well I am flattered. I am Transylvanian, used to be more ethnic Germans there but most left

The Corona virus is hitting ATL hard. GA Tech is closed down through the end of this month. My adviser tells me to stay inside.



someone from highschool wrote me to ask if I am self-isolating

I wrote back saying I'm s mathematician

It's really scary.



are you scared personally?

And if course our useless president trump closed down the task force to deal with a global pandemic.



my province (like your states) has some pretty fucking stupid policies also

Not yet. My parents are both 65+, so I hesitate to think what could happen if one of them caught it.



it's relatively harmless for young people like us compared to 65, 70+

I saw statistics maybe 1% of young people die but 20% of elderly

it's basically russian roulette odds for older folks

Not what I hear from my adviser whose daughter in law is nurse. I'm in my early thirties. The situation is if you catch it, there will not be enough beds in the hospital. Something like triage for ventilators versus morphine when your lungs get full of fluids.



personally, I wouldn't go to a hospital

but I might be crazy

It's actually very scary. A pandemic of this magnitude happens roughly once a century. This time we're all much more connected by global travel



I'm 30 btw

I'm 33



I think we should count our blessings honestly

it's nothing compared to spanish flu a century ago

Yeah, but what do I do if my elderly parents get affected?

It's a real concern.





are they staying in, not working etc?

They are retired. My mom just had back surgery m



are you going to stay with them now that school is shutting down?

I'm staying at grad housing. Trying to stay isolated.



I sincerely hope you and your loved ones get through this ok.

Me too. Ands yours as well.



and I hope you curtail the fear

some is good to keep you safe but it doesn't help in big doses

The reality is that [this.is](#) going to be a prolonged global pandemic. A month from now will feel much different. Please do what you can to stay safe. I have washed hands with warm water and soap 10+ times today. Sounds ridiculous and ocd, but even 30 year olds can end up very sick from this virus



I appreciate the concern. I work from home and my clinician friends have been preaching the hand washing.

I talked [with.my](#) adviser over video chat this morning. His daughter in law is a nurse. This is all going to get much worse before it gets better. I hope that it's all warning, but in the worst case things look really bad.



things can always get worse... we could get smashed into oblivion by an asteroid tomorrow

Yes. But this is happening now.



it could get a little worse then get better

it could be the end of our kind of civilization

they don't know

My adviser is a very bright man. He tells me this will be bad before it gets much better.



I'm not discrediting that

but I don't think this is the worst plague we have been hit with

No think like this. Too many people are sick. There aren't enough hospital beds. Triage decides who gets a ventilator to help you breath while your lungs fill up with fluid, and who gets morphine to help with the pain

The 1400's saw the black plague

Nothing like that

But 100 years ago we saw a flu pandemic that took 20 million lives.

Think how connected we are now compared to then.

This can. Do a lot of damage.



it's probably not as bad as spanish flu

I have a virologist friend who told me that

I trust him

and if it is that bad or worse, I still won't panic

Chances are by the time this is over you will know someone who has had the virus.



I understand what you are saying but I should maybe clarify why I seem so numb.

I lost my best friend a year ago, he was 45. My sister is 26 with a big brain tumor and she is my only sibling. I kind of don't feel anything anymore

I'm very sorry.



so count your blessings no matter what happens

I take effexor. It makes me happy even when I should want to be in bed.



I personally believe our society is sick not the majority of people they want to medicate.

but I am happy for you if you have something that helps

the percentage of people in math/physics/CS the system wants to medicate is absurd IMO

I have an understated opinion about that. Effexor is better than Lexapro, which I was in forever. It makes you feel more upbeat and talkative.

I also like Adderall.



adderall is basically math crack

not something I could ever be prescribed

This is an opinion piece, but that will make you more creative for a while



I like it too much and avoid it

I like it too.

Adult adhd is real. Just be careful with it



I saw a professional after all his stuff struck me

and they couldn't diagnose me with anything

to be blunt, I think it's just life being a bitch with me

Try adult adhd if you want the prescription.

Find a specialist



you need a very strong will to not get hooked

I don't think I have it

a romanian chemist Lazar Edeleanu first synthesized amphetamine

Yeah. That's always an issue. Take it as prescribed and your good. I have the HD part of it which means I can never really focus without trying the meds.

I will literally do 1/10 of everything I try without it. With it.i can function. This is 10 years later with a good doctor.



do you feel some euphoria or it's just enough of a dose for you to be "normal"?

It has recreational use too. I just take the pills everyday. Some days I take two and skip a dose. I.personally don't see the problem with "recreational" uses.





it is no problem until it is one

I don't think it should be illegal etc.

If you are acting like a "junkie" then you shouldn't [take.it](#).



but myself, I feel that I could develop a problem so I stay away from it

exacty

exactly

I understand that. I have abused before. Bad situation.

My doctor watches me closely



do you meditate or pray?

I am more spiritual than anything else. Call it mediation.



I find it can work in a similar way to stimulants for building focus

it just takes obviously way more work than popping a pil

pill

I'm not awesome at mindfulness meditation. I like the repeat a mantra style better.

Yeah. The point is being able to be a le to control yourself on what you take. Musicians in the 60s used drugs to enhance mental cognition



musicians, poets, writers, mathematicians have always used drugs

If you can't handle Adderall for more than an afternoon, don't take it.

I like the way an after noon of 1.5x my prescription makes me function....



with the potential for abuse. I stay away from chemicals except coffee

and sometimes a cigarette (obviously it's bad)

but I won't become a junkie...

well maybe I am already a coffee junkie but one can function in that state

Coffee isn't the same. I do still smoke however. Promised myself that through grad school.



it's the fucking devil

the most seductive drug I ever tried

I'm not going to die of lung cancer. But for now I can indulge



the pain of the early math career is all too real

and I know it can water it down a little

Ok..do you have a manuscript?

I've got to get into other things otherwise.



you mean right now?

I sent you the code I used to make the start of the math-art submission...

I just truncated the power series

you don't have to look at it, you can if you want

I got asked to submit an art piece by one of the organizers of the conference so I just scrambled to come up with something...

Yeah, but for the orthogonal polynomials stuff, I need a manuscript to see what I'm doing.

It's nice just to talk to you, but I have other things that need to get done.



I don't ever want to keep you distracted...

The orthogonal polynomials application paper would be nice.



ok let me look at the problem I sent you again real quick and see what I should write you



sometimes I do some really stupid stuff like write emails and they just float in the drafts...

I sent you an email mar 5

OP has the functions used for my 3d spline primitive

what I'd like to do is come up with some kind of numerical recipe to compute an approximation to those functions

I'll do a write up of my goals

I just want to pick your brain for a moment chatting now if that is ok with you

**Our problem:** When  $\lambda = 0$ ,  $\varphi = \frac{\pi}{2}$ ,  $c = 1, \frac{1}{2}$  or  $\frac{3}{2}$ ,  $\eta \in \mathbb{R}$  and  $x \in \mathbb{R}_{<0}$ , evaluate

$$\sum_{n=0}^{\infty} \frac{1}{(c + \frac{1}{2})_n} Q_n^\lambda(\eta; \varphi, c) x^n$$

where  $Q_n^\lambda(\eta; \varphi, c)$  denotes the  $c$ -associated Meixner-Pollaczek polynomials.

do you think you can think up a way to bound the tail of the series?

Do you need a sage math implementation?



I think it would be cool personally

and I'd present it in my paper at the curves/surfaces conference in Norway (when it is held eventually but doubt June now...)

[Let.me](#) work on it. Could take an hour.



great

the tuncated version I used with the first 40 terms just used a cached function with the recurrence relation

it was good enough for my graphics demo

Can I do this for you on Wednesday afternoon?



whenever, you are the boss

Cool. Will get back to you then.



have a good day

always great chatting with you



Yup. You too.

Mar 16, 6:24 PM



hi

how are you holding up?

I'm good



do you know of Andrew Granville?

(he was my number theory prof for my undergrad)

he loves my art piece and it warms my heart

how is your work going?

Alex • Mar 17, 1:19 PM



hi!

my curves and surfaces conference got delayed one year

so no rush if you feel like helping

but I'm still working in my math hermitage...

how are you doing?

Working on some different things. Let's put off the orthogonal polynomial stuff for a while.



I'm curious, what are you working on?

(in case you want to share)

Alex • Mar 18, 8:16 PM

Montgomery and Vaughn's book on multiplicative number theory has some really cool stuff in it



it's analytic?

ANT is so hard!

bur beautiful

Alex • Mar 18, 9:25 PM

Yes. ANT. Hard like Davenport, but has cooler results.



i know Davenport is the canonical introduction

btw I've been getting great feedback on my art piece. I'm quite happy about that

I think I'm gonna start making math/art jewelry

I think the figure I showed you could make a nice pendant

and I have plenty of other ideas floating around in my head and laptop

Alex • Mar 18, 11:17 PM



I emailed you one shape...

Nice.



thank you

do you like visual art? or

I like playing with the GIMP.

Do you really need that sage code this morning?



well I found out my conference just got delayed by 1 year so there really is no rush

<https://github.com/maxieds/GEyesThemes>

If you use gnome on Linux.



shotout for concretemath

Alex • Mar 19, 12:17 AM



Knuth is so OG

Alex • Mar 19, 12:44 AM

This is what I surmise works ... Please don't share it. I think the formulas are special.

$$\frac{|M(x)|}{\sqrt{x}} \gg \left| o(1) + \int_{\frac{\log \log \log \log x}{2}}^{\frac{\log \log \log \log x}{2} + \frac{1}{2}} \frac{2\tilde{A}_0 \sqrt{x}}{(m+1)} (2t+1)^{\frac{3}{2}(2t+1)} e^{(2t+1)(m+1)} dt \right|.$$

*A corresponding upper bound is possible to formulate, but more difficult to express exactly. It is given by*

$$\frac{|M(x)|}{\sqrt{x}} \ll \sum_{m \geq 0} \left[ \left( \frac{11}{3} \right)^m \frac{14\tilde{A}_1 \sqrt{x}}{(14m-3)m!} \right] \left( O(1) + \int_{\frac{\log \log \log \log x}{2}}^{\frac{\log \log \log \log x}{2} + \frac{1}{2}} e^{(2t+1)(2m-10/7)} (2t+1)^{\frac{3}{2}(2t+1)} dt \right).$$

Mar 19, 9:51 PM



hi

what is this?

BTW I never share anything you write me without your explicit permission

Mertens function.



you are scaring me with number theory

It's nice when things just sort of seem to work...



I get that feeling a lot in applied math

until it doesn't

it's like a constant promised date with a hot girl who ends up bailing. I end up kind of numb to feeling,

It was probably my sister. She was drunk and has herpes. Don't get mad. Keep at it.



HAHAHA

sounds like yous sis is friends with mine

in which case, mine would not have let me talk to her in the first place

I have to move home as ga tech is closing for the rest of the semester. My dad is here yelling at me to start packing.

I have to work on that. Good to share progress with you.



always a pleasure

don't forget any ANT books

Alex • Mar 19, 10:18 PM

First in the pile is a classic



you told me you were spiritual but not religious

but I know your holy book



It's not holy. Just well worn out. This is something else I have been writing on Android this week. Since my comp was cancelled, I found time to use the free Chameleon hardware lab401 sent me. It's coming along.



NFC penetrating device.

Pentesting sniffer hardware board. Can also emulate standard door reader tags. The new models have Bluetooth, so I had to add that to my app.



are you a spy?

wait don't answer

No. I just got sick of carrying my school I'd around with my phone to open doors. Turns out Android isn't low level enough yet to emulate mist NFC hardware. So I picked up a Chameleon board to log the door stuff, and wrote a logger for it to hook up to my phone. The proxmarks are more sophisticated, and pricier, but these do a lot.



low level coding is the shit

ever done FPGA work?

No, but I'd like to know how. For NFC, were basically talking assembly like byte codes to write directly to the tags. Android let's you communicate with NFC tags, but doesn't give you the hardware access to sniff thf raw bits coming off the hardware. Kind of like Wireshark for wireless tag

devices. It's still being developed. The proxmarks can do it all, but will run like \$400 for a single device.



I just signed an NDA today for a company that makes telescope control hardware

motion control sw and servo drives

I had a friend with a disability that couldn't get her eye gaze software to work off of Windows. I thought I might be able to reverse engineer the usb protocol with a fpga. Never gotten that into the ee work to do it easily with grad school homework.



reverse engineering is a bitch

Debugging on Android is a bitch.



android anything is a bitch imo

fucking non linux heresy

Sort of. Your alternative is iOS, so...



even worse

I'm gonna say something crazy

really crazy

I don't have a mobile phone

I have had the worst experiences this year making Mac compatible software for my RA job. They broke gcc!



I have a landline and a good laptop

That's ok. Maybe I should do it. Thinkpad? My current laptop is crap.



a zenbook s I got in TW

I bought 3 of them one for me and one for each of my main collaborators

13 inches, super thin and light, i7 lots of ram ssd

touchscreen

ergonomic keyboard angle

fucking love it

I have had my last couple of phones badly hacked by malware... What do you do to call a cab? I have also gotten tethered to my emails and the phone is so convenient.



the only time I am not biking or taking the subway it is once in a blue moon out for drinks

and I just hail one

I'm going to play it safe and go pack for tomorrow. We should continue the jack ng discussion later.



good luck, write me whenever

Alex • Mar 19, 11:01 PM

You might also want to look at orthogonal polynomials as providing inversion relations (relative to some discrete or continuous weight). E.g., see [https://en.wikipedia.org/wiki/Generating\\_function\\_transformation#Inversion\\_relations\\_and\\_generating\\_function\\_identities](https://en.wikipedia.org/wiki/Generating_function_transformation#Inversion_relations_and_generating_function_identities)

Also...

Mar 20, 9:31 AM



so many orthogonal polynomials...

so much French

Alex • Mar 20, 1:15 PM



hey

how are you feeling?

total lockdown here

Alex • Mar 23, 11:08 PM

I am actually taking my probability comp next week. Given the circumstances, they are going to proctor the exam over video chat.

I made some more interesting progress by refusing not to stare obsessively at Nathematixa notebooks.

Also the latest release of my Chameleon app is out...

Not a bad spring break.

<https://play.google.com/store/apps/details?id=com.maxieds.chameleonminilivedebugger>

Mar 24, 3:28 AM



congrats on the release

I just got some contract applied math work!

Great!



astrometrics is the holy grail of motion control work

Alex • Mar 24, 3:05 PM



Do you like the Smashing Pumpkins? I'm going to see the for concert number 7 in a row with my mom in October. Tradition that started in 1996.

Mar 25, 12:03 PM



never listened to them

wanna suggest a song or songs for me?

Do you have Spotify?



nope

Let me put together a you tube list of my favorites. It's going to take an hour or two. I'm online grocery shopping right now.

1979 is my mom's favorite. I love the drums on "I am one". Cherub rock and today are good.



it's pseudo martial law here

fucking sucks being sort of locked up

Yeah. The Atlanta mayor put people on lock down except for groceries, prescription, and only essential travel.

This virus is going to be nasty until there's a vaccine.

Mar 25, 1:27 PM

My playlist (sorted by most popular): [https://www.youtube.com/playlist?list=PLPV7hiOR4qwyuPu8s-EV5a\\_CO8K6TG7fD](https://www.youtube.com/playlist?list=PLPV7hiOR4qwyuPu8s-EV5a_CO8K6TG7fD)

Other pumpkins "greatest hits" playlists:



i will check it out ❤️

[https://www.youtube.com/playlist?list=PLRpKxHvU2zNqUifF1WY\\_oPqGgVKcohfyj](https://www.youtube.com/playlist?list=PLRpKxHvU2zNqUifF1WY_oPqGgVKcohfyj)



thank you

<https://www.youtube.com/playlist?list=PL2038DA5165A30CAC>

No problem. Some people can't stand some of the more popular "Melancholy" era tracks where Billy Corgan's voice gets a little whiny.

Just skip to the next track if one is distasteful. There's some really good stuff on there in general for rock people, and even my mother...



how are you feeling?

Good today. Had a long night's rest. My groceries are getting delivered.

I'm studying for my exam after this, which is next Friday online.



the probability one?

My favorite pal is keeping me company in social isolation.



who is that?

I sent a picture...

Still uploading.

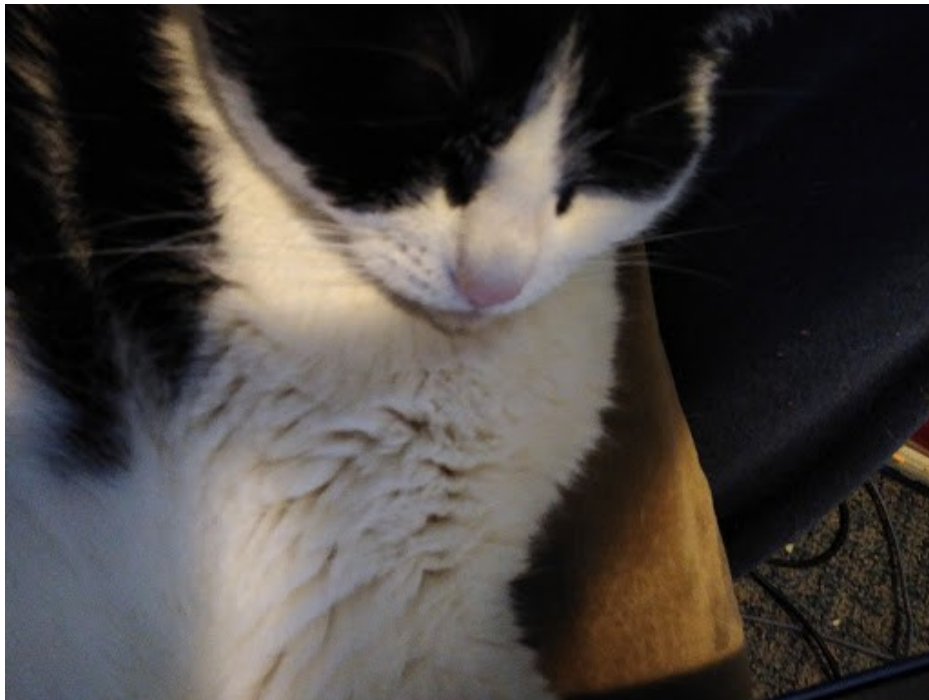


oh a pet

I am guessing

(conjecture  
)

It's Kush, my cow-spotted feline



beautiful!

Yes. She's very pretty.

Mar 25, 3:15 PM

Some good news that finally made me laugh out loud last week. Just don't ask for clarifications. Really not in the mood to go into that. Just celebrate with me that there are now Gnome GEyes eyeball profiles included by default "for the ladies"...

[https://gitlab.gnome.org/GNOME/gnome-applets/-/merge\\_requests/2#note\\_736427](https://gitlab.gnome.org/GNOME/gnome-applets/-/merge_requests/2#note_736427)



so feminine

love it

Right. Green eyed girl is what I would be using other than the math themes.

Mar 25, 4:32 PM



I think this apocalypse is giving me the time finally to seduce my highschool crush over facebook messenger after 15 years

that and read numerical analysis algorithms

Alex • Mar 25, 9:16 PM

Do you know of any good practical problems with the CLT?

Mar 26, 6:38 AM



central limit theorem?

I've never done any practical probability...

Alex • Mar 26, 1:22 PM

Can I share a secret that you cannot tell anyone until at least August?

Mar 26, 1:54 PM

Can you send me a picture of your high school I'd, or old college / grad school buzzcard? Nothing like a driver's license. Just curious what you actually look like.

Good luck with the ladies.

Mar 26, 2:24 PM

## People in rural Florida near Alabama need toilet tissue!



<https://youtu.be/m0-OYwzGEOo>



share the secret





Ok. I made progress on Mertens. I believe, but nothing's a sure bet with these things, that I can prove a tighter \*lower bound\* than can currently be done with upper bounds at the moment. I'm supposed to be focusing only on comp prep. But I did that, and couldn't resist temptation to keep working on what I'm really here to do. SSH don't tell anyone.

My adviser told me to drop everything for the next week.



good luck

I'll meditate for you

number theory is the holy grail of math

Cool. Thanks. That's all I ask.



your number theory work will always be in my prayers

Funny. I had a hard core hacker make unexpected friends with me on Facebook recently. Is your Gmail a pseudonym?



this is my real name

Ok, makes sense.



can I see what you look like too?

I pledge easy but quality work on orthogonal polynomials next year for the support.

...



did I say something inappropriate?

it's fine if you're shy btw pretty sure you exist

<https://math.gatech.edu/people/maxie-schmidt>

No. I just look like hell today. Haven't slept yet. But the math was getting good.



that is the most programmer page ever

sideways pic because you have no fucks to give

a mathematician would have a list of exotic articles followed by cat pictures and weird side interests

No. It's the math server software. It's from last fall. So recent enough.



I'm teasing you

I love my pets. My first cat was a guardian angel



beautiful

My parents have 10 cats. Dad used to work at a pet good company. We're pet people.



you are become cat

Cameo passed the summer before I came to GA Tech. Kush is the second one. Love her as much. She's just more attitudinal and insistent sometimes.



yeah you can never replace the personality

wanna see a poem I wrote while studying this new family of curves the spherical clothoid?

idk i showed you already

Sure.



Title: The empty set exists

To see her would be like touching death  
It's axiomatic, the foundation of any metric  
You love her because she's her

Double entendre across the stanza  
But her hair, only spirals

My love for her, pure vector  
Imaginary, hypercomplex  
Unmixed evil, I bow to Lord Kelvin  
Maxwell's demon, my hamiltonian angel

LeMaitre rolls the globe  
I scour it all  
The absolute framed in the abstract  
Her touch electric, she skirts the real  
The thought of her chases me  
She's the fairest of them all

I pray for her to the lord of all men  
Cosmic logic made flesh, restorer of balance  
I praise the giants who lifted me up  
Euler, Thales, Anaximander

Alex • Mar 26, 4:28 PM

Euler but not Newton?

The (one of) God father of calculus?

## The Smashing Pumpkins - Lily (My one and only)



<https://youtu.be/3RjBIBr5MB0>



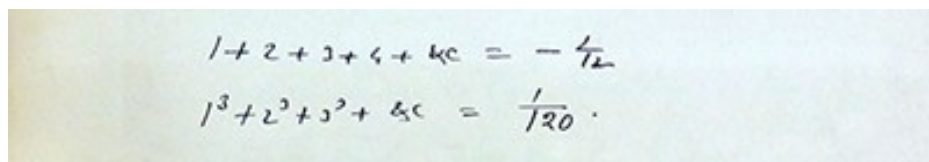
Euler is more super natural to me than Newton

and I can't list them all, 3 is the many

Most mathematicians like Gauss. Riemann will be famous for a while. Euclid, first proof of infinitude of primes. And then there's Ramanujan, true genius.

Have you seen his notation for analytic continuation for the zeta function? Utterly confuses math minors and pisses off old stodgy bastards alike. Couldn't get better.

<https://writings.stephenwolfram.com/2016/04/who-was-ramanujan/>



A photograph of a piece of paper with handwritten mathematical formulas in dark ink. The first formula is  $1 + 2 + 3 + 4 + \dots = -\frac{1}{12}$ . The second formula is  $1^3 + 2^3 + 3^3 + \dots = \frac{1}{120}$ .



ramanujan and euler were both clearly aliens

Very productive aliens. What about more recently Erdos?



erdos was more like a high level math monk

I will tell you why this is distinct.

but write me your thoughts first



Also liked his Ritalin I understand.



dexedrine too

Euler and Ramanujan came up with brilliance alone more or less but Erdos was a fanatical collaborator math vagabond

While you are staying at home with crusty bread when no one will deliver, try this... <https://www4.publix.com/recipes-planning/aprons-recipes/strawberry-white-chocolate-bread-pudding>

I make mine with a hybrid of raspberry and blackberry.



nice

the plants i have here morphed into a hybrid like that too

It's a much different recipe than the traditional nutmeg stuff. Much sweeter.

I make mine doubling the recipe with a loaf of wonder bread.

Let the bigger dish bake for like an hour.



thank you for wishing me luck with the ladies earlier btw



I would like an apocalypse gf

but perhaps that is greedy

it's not even about sex

it's about a girl to watch netflix with

and laugh at the hysteria on the news

or perhaps cry

Let me think about what sequence I would choose. Mobius is too regular. Maybe lookup the Mertens function on oeis, look at the crazy staircase plirs on math world. I can give you a non traditional GF for it.

Wod be totally appropriate too, seeing as that's what I've been doing recently...

Plots .

My new phone doesn't know me yet. Auto [complete.is](http://complete.is) screwy.

I don't know the theory. But summation of the Mobius function is supposed to be pseudonym random in structure.

What is the virus like exponential growth game where you watch it expand. Game if life?

Pseudo random that is



can I tell you something very scary that I trust?

and you don't repeat it

Sure.



my best friend who passed away was big in the pgp encrypted phone business and would resell a lot of phone unlock codes en masse

mainly to china

I still keep in touch with some of his buddies and saw one today

so my buddy was connected with sony so any sony phone that got unlocked in china

well the code went through his hands for some \$

anyway this guy tells me and I trust it that his contacts in China have access to all kinds of cell phone statistics in China

follow me so far?

he told me 2 million sims went dead

i.e. no phone activity anymore

that is probably a better estimate for the number of dead

in china

Hmm. Nowadays you just buy them unlocked

I used to have an 800mhz Motorola leather case that when hacked could listen in clear text.

Also fun with sissy's wireless analog short range device with a radio shack scanner.

Aim sniff never worked for me on the switched Ethernet. Tried ettercap, but I didn't understand what it did then.

I'm a grey hat. BTW.



i know the law changed around the time my friend died

and it was a wave country by country

How long I ago. Since the iPhone and droids, things have really changed, right?



2 years and I believe things were extra slow to change in China

but anyway these people are still doing some kind of business with encrypted phones

i trust that they are in the know

anyway, I could be getting trolled

but I doubt it

Alex • Mar 26, 7:08 PM

I installed the kingo root on my device in fall of 2017. It didn't work so I installed some pop up Tau

software that no longer is linked on Google. When I started doing Chameleon development on my phone I figured it out...

Want to see most of the root kit?

Let me vent and just tell you some context...

<https://github.com/maxieds/MyProtestToTheIllinoisDMCATakedownActOf2017/tree/master/bug-tracking/mspy-chaos-droid>

I got drunk in a safe fenced in space on the cattio with family and a gun around. Decent tequila, and then around 10-11 pm a good bottle of champagne. I created this playlist while ruminating...

Here's a playlist for you... Lucky225 is still an asshole by maxieds

[https://open.spotify.com/playlist/7BZc0lcgVyAlMcpl0X7xZ6?si=8WBOW0e\\_T\\_2JN3SgaGeWHw](https://open.spotify.com/playlist/7BZc0lcgVyAlMcpl0X7xZ6?si=8WBOW0e_T_2JN3SgaGeWHw)

This guy doesn't know when you stop, or what "back off" means in any form. My phone subsequently gets hacked to the point I can detect it, with detailed core dumps from the droud. So I get pissed, add more punk rock than as alterna girl rock, this gets worse

Around midnight I finally decided to post all that source code I have been caching.

I actually filed a police report in 2018 about the phone getting hacked. They couldn't help me, even in metro Atlanta.

Let me post a link to bt.apk, which I intentionally bought, but never installed, to reverse engineer it with adb like tools. Incognito, which I pay the professional license fee for called it mspy.

<https://drive.google.com/open?id=11oQLTAVV0MH8ZBc2bJdP2IIMbU70MyPI>

That's my piece for now.

All I did to him was get into a decent engineering CS program as an undergrad.  
Message not delivered.



what is ruminating?

Thinking about all of the circumstances and events that I have been through

Getting drunk and thinking

In general



very ancient greek



Hmm...



the tradition is ancient

think

drink

think different

beautiful

Yes. My inclination is that the root kit was based on mspy. An insanely invasive spyware software suite for abusive parenting and stalkers. There is if look hard for it a repo linked in Google that lists permissions of some of the apks in that file set. It's obviously an underground mod

Not bad for a non security person's sensibilities?



this is fucked

Yeah. I'm better. God had a strange sense of humor, or something does. "Blessed and cursed at once" as the pumpkins lyrics go.



God does laugh at us all

God is a wrathful revelation being. There are nicer deities out there.

Mar 26, 7:43 PM



the logos is also pythagorean God

Or just energy works (karma if you will). I've seen my grandmother and great grandmother as apparitions before. Only met one. Thought the other one wanted to meet me.

Strange sense experiences



ancient greek language is inherently mystical

translations do not do it justice

another translation for logos

divine essence

We also had a "garden fairy" living in MO. My mom sent it to me without me knowing it. I saw a glowing dragon / butterfly on my dorm wall. Then she later told me she had done it. My family is haunted. You can be skeptical until you've experienced it. Then you understand.



oh i have experienced my fair share of very spooky shit

Alex • Mar 26, 8:31 PM



hi!

how goes it?

Trying to study for probability...



good luck

I don't wanna distract you

Thank you. That I do not need it.

Mar 30, 1:22 AM



I leave you with Catullus 85

Odi et amo. Quare id faciam fortasse requiris.  
Nescio, sed fieri sentio et excrucior.

Translation for the math enabled, latinate illiterates?



odi et amo

I love and I hate

quare id faciam

why do I do this

fortasse requiris

perhaps you ask

nescio

i dont know

sed fieri sentio et excrucior

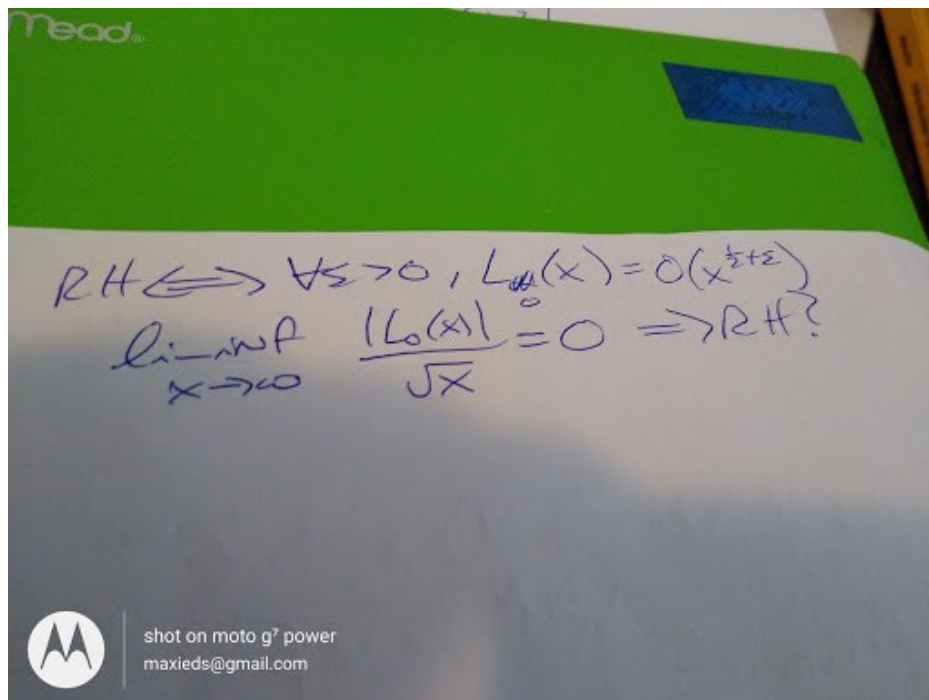
but i feel it happening and am tortured

Alex • Mar 30, 1:53 AM

Mar 30, 6:01 AM



catullus is so OG





motherfucker

is RH what I think it is

?

you're playing with some real grown up maths there

Alex • Mar 30, 3:00 PM



how goes the quest

I just had an unsettling spiritual experience

Alex • Mar 31, 12:09 AM

It's half a joke. The point of what I'm trying to do is avoid conventional approaches to a stale problem. This comes nowhere close the the RH, and we do not want to have to draw upon results that are even deeper just to use a classically founded approach.

You are clearly delirious on virus and or beer. I am going without this week.



no virus or beer I swear

all sober

a lot of contemplation alone though

remember when you told me you had spooky experiences?

and I believe you btw

no hallucinations or anything

I've been talking to a girl from highschool

You should consider adopting a stray to keep you company.





I want a hamster

I don't remember high school.



I liked having a hamster

ah good

I just remember this one girl

she confessed some witchcraft stuff to me that I somehow suspected

it seems foolish or crazy

anyway perhaps that is my weird experience to match your strange apparition

I used a radio scanner once to divine similar things. I put it past that because she was annoying and a socially adept cheerleader quality asshole. I'm going offline for a while.



btw stil praying for your results on my long walks

hope you are feeling it ♥♥

Alex • Mar 31, 12:59 AM

My results are correct. It's all about tightness. It just proves a path, not necessarily an optimal one. Still not bad. Would you like to write some software for me?

In sage. It would save me time converting my convenience Mathematica work into reusable python...

Mar 31, 2:25 AM



send me your work and I'll take a look

but I don't want to promise a result since I am not a sage expert

but I am willing to invest my time

Alex • Mar 31, 3:15 PM



email me the code when you get the chance

btw I don't have mathematica anymore but I am confident I can read code

and or paste bits into wolfram alpha

Alex • Mar 31, 3:43 PM

Wolfram alpha is useless without scripting capability. We are not first year clac students doing their integral calculus homework without prn and paoer. Sage can import strings output by Mathematica in input form, which might be provided as test cases.

I'd like to se some more samples of your work. What is your GitHub handle?



I don't have a github. I was just saying because I use wolfram alpha sometimes just for special functions...

(it's still useful)

I have a couple physics papers and one CS paper on researchgate

I,ve done that and industrial work

(motion control algos, motor control algos)

<https://www.youtube.com/playlist?list=PLF4399E43654D62E9>



just got back into math on my own with my crew in the last 6 months now

nice the clash!

GitHub is imperative for doing any software development. If you are going to want me to write any code for the orthogonal polynomials conference work, you are going to need a GitHub profile.



yes you are right

Free to register. \$7 a month for "pro" access where you can keep private repos.



I have some material I can already publish

Enterprise access is through a university or large corporation, so don't even consider that pricing.

Typically you will want to add a license. I like gpl but there are a plethora of other oss licenses. Things like research drafts can even be kept under a creative commons license.



yes

You can fork my thesis python repo and start from that code bases if you like.



thank you for the suggestion

the only stuff that comes to mind very quickly that I can put on github is implementations of these new spline primitive curves I am studying using mpmath tools

I will write specs for a sage math add-on that I would find useful. If you are really creative and run with it, the add-on may eventually be worth submitting to the official sage code for packages. If that's an end goal of yours, go ahead and lookup / pay close attention to their coding style requirements and specs before you start. That will save a lot of work down the road.



idk if you ever used that numeric library in sagemath

just read your last message

yes that is true and deep what you said

I should study their coding style...

I'll be honest with you

I just had a plan all made-up for 2 conferences this summer

so I knew what novel results to document in detail

and prepare some articles, artwork etc

but now I clearly have the time to refine coding, version control, read more maths books etc etc

BTW do you use an IDE with sagemath?

Alex • Apr 1, 2:26 PM

IDE, no. It's more like ipython on the terminal. There are Jupiter notebook interfaces. I find it's easiest just to write scripts and run them one by one.



that's exactly what I do

anyway all of the sagemath code I have written has had a lot of depth in the code but very few lines

(to me)

BTW a small caveat

currently wolfram alpha has a lot of special forms of special functions that sagemath doesn't have

so IMHO it is still very useful for mathematical physics

Alex • Apr 1, 3:20 PM



when is your probability exam?

did it pass already? (I forget)

Alex • Apr 1, 7:01 PM

Friday.



you'll do good

Alex • Apr 1, 7:25 PM



btw I have mathematica now

so I can checkout translation from mathematica to sage



Alex • Apr 3, 4:20 PM

I got the flu. It's going to take me weeks to get back around to this.

Apr 5, 6:24 PM



ok be good ❤️

Alex • Apr 5, 9:21 PM



hi!

my collaborator Khalid in Morocco made a breakthrough!

Alex • Apr 6, 3:40 PM



I have a reduction formula for one of the 3 generating functions...

(assuming his result is valid)

I really won't have time to look at this for a while.



it's all good

always 0 pressure for me, I just wanted to tell you some news

you feel me?

how are you feeling btw? more sick, less sick?

Better today.

Apr 6, 4:39 PM



hi

quick question if you are feeling ok

(feel free to ignore me or tell me to fuck off), how do you prefer to code definite integrals in sage  
math^

?

I'm gonna play around with definite\_integral

Alex • Apr 8, 9:37 PM



hey another random question, do you have TEX in gmail?

I love it

I don't use sage that often



it is so satisfying and fast to write an expression in sage, output latex automatically and copy paste  
it into gmail and send an email

Alex • Apr 9, 3:52 PM



integral representation of a 2d hypergeometric function

$$\phi_1(i\eta + 1, i\eta, i\eta + \frac{3}{2}; \frac{1}{2}, i\alpha s^2) = \frac{\Gamma(i\eta + \frac{3}{2})}{\sqrt{\pi}\Gamma(i\eta + 1)} \int_0^1 \frac{t^{i\eta} e^{(\frac{1}{2}i\alpha s^2 t)}}{\sqrt{-t+1}(-\frac{1}{2}t+1)^{i\eta}} dt$$

rendered with the gmail plugin

it's pretty

Alex • Apr 9, 4:21 PM



hey

how are you feeling?

Better. Fever free for over a week. I consider myself lucky to have had a mild flu.



so happy to hear that

You?



spiritually taxing times

I gave a friend who was going over for groceries a face mask yesterday. Just happened to see him in the street.

It's strangely dangerous just to act normal



indeed

<https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>

Familiarize yourself with this.



ok

I was stupid silly disoriented, and the nurse's at GA tech missed it.

It was after the fact that I realized how sick I was

Most people won't need an er trip, but it's good to be educated

I'm scared for my elderly parents catching this. I can deal with flu, but they are really at risk



yes

i understand

Be careful going out without a surgical mask. Very contagious. You will probably be fine at your age, but not fun for a week.

Order groceries online.

<https://play.google.com/store/apps/details?id=com.instacart.client>

Walmart bselks masks



I'm all set for masks

Just be careful. It's contagious and going to be bad.



thank you for the concern

Alex • Apr 12, 11:14 PM

I just should convey that if all you end up with in a pandemic like this is a "mild flu" you are a lucky SOB. I have heard warnings that six months from now in the ER there will be triage decisions about who gets a ventilator and who gets morphine and their lungs fill up with fluid. Trump shut down a task force months ago that could have saved this being a pandemic, but now lives are at stake

I don't like this, but be very careful as the months proceed



how do you think the triage will work?

money?

I have no idea

That's the apocalypse scenario that I have been warned about

The point is we are at a dangerous tipping point and you need to be very careful with your health

Vote Elizabeth Warren





you know I live in Canada though right?

I know

We are still stuck with many of the decisions the American electorate makes?

Anyone, anything but Trump



I was just saying that because I cant vote for a third party candidate just because I'm not american

but i would if I was

Elizabeth Warren is my vote. Practically, as long as Trump loses were all in Better shape.



you heard conway died?

No



yeah

from covid

Alex • Apr 12, 11:45 PM

Wow!

Personally, it took me a month's worth of Klonopin to get through 8 days of "mild flu", aka Hell. God bless my shrink for letting me refill early under the circumstances.



your folks are handling things well?

Yeah. My sister thinks she's had covid

My parents are stubborn

Apr 13, 12:02 AM



Can I tell you something else secret? It's pouring down rain here...

Very drenched

Apr 13, 1:53 AM



damn

Alex • Apr 13, 4:08 AM

I'd actually like to meet you before we collaborate on anything. This has been suggested to me. If the covid issue goes down, are you going to be in Atlanta in the late summer?



i could come

assuming this end times vibe ends

" This has been suggested to me"

do you have some apprehension?

Let me ask my adviser.



I totally understand btw

I had work stolen from me when I was 20

so I for one totally understand concerns

It's not going to be about stolen work. I wouldn't even collaborate with one of my good friends at school about what my main bag is right now. He's fine with that and we have published together before...

Orthogonal polynomials is going to be easy for me.



I'm just curious re: what your concerns are

because I'd love to hear them if you have any

The issue I'm seeing is that I have shared some personal information with you over a beer or two with my cat. I just want to meet you before signing on for a conference.

After that I'd be happy to do some spot work for your group as you need a mathematician to help.



the conference is delayed a year now for sure

We could even chat online this summer over video



so we have a fair bit of time to work and decide whatever

Yep.



for sure we could videochat whenever

possibly it is a good fit with you

because it is CS meets EGF's of orthogonal polynomials

I hope it's not an insulting request. I just would prefer to have talked with anyone I'm going to collaborate with on a paper or conference.

I really don't have time to do this for a while anyway.

This summer for sure



I'm not insulted at all



I was just worried that you were worried about something

No it's fine. And I appreciate the chatter back while I'm mostly apart from friends at school for reasons that are insane. I just want to talk shop before putting my name out there on anything right now.

So we should talk research in July or August?

Chatter between is welcome m



for sure

I'll do a good write up of objectives by then and have all my current results compiled

Cool. I added a couple of instrumental performances to the YouTube playlist.i shared before.





I'll check it out in a bit

I'm listening to german techno now

are you into numerical analysis too

?

more algorithmic stuff?

for later

Alex • Apr 14, 7:22 PM

I keep thinking about how I'd like to see my former baseball team win again.



To be [honest.my](https://honest.my) intellectual focus is an exam right now.



what exam?

prob went ok?

Didn't take it yet. I was too sick.

Scheduled for later

Apr 14, 8:23 PM

I "reached out" to a professor friend of mine at UBC. I think she has always been secretly interested in this type of theoretical physics. When you get back to me this summer with your manuscript, maybe we should make her a collaborator too for you. She might want to give us a 78 on her 80 point scale too.



awesome

btw I think monday I'll finish the euler type integral rep of the spherical clothoid

a lot of sagemath hax and sympy in sagemath too

fuck I love sympy

and I am sucked for aesthetic curves



\*sucker

Alex • 12:34 AM

I like the Grapes of Wrath. I have a particular "grip and twist" method in mind that is much less about dexterity and much more about will power. I hope you know what I mean.



steinbeck is a fucking genius

Alex • 1:10 AM

Do you ever read 2600? I propose a collaboration. You said you can hack.

What is your alias? One never puts thier real name on that.

1:45 AM

Subtext: What is it exactly you want, Jason?

2:24 AM

He speaks to us in his native tounge, and what does he say? "Suck my dick".

Good night.

2:46 AM



I have a pile of dead trolls on my desk!



8:34 AM



nice trolls

Alex • 1:48 PM