12:07:41 From Alice Li to Everyone: Does the exam includes materials for today?

No. No GPU material will be on the test.

12:10:39 From Gutzmann, Melanie to Everyone: Would you happen to know if there will be a remote option for in-person classes in the fall?

Latest info is that remote will only be for classes that are too big to fit in lecture halls with distancing. However, OSU fitted all classrooms with Zoom equipment, so it is possible that some instructors will broadcast the class over Zoom anyway.

[ The decision was made over the weekend to offer CS 491 in the FQ. ]

12:11:13 From James Taylor to Everyone: I was just talking to my advisor about 491. She said a decision hadn't been made yet. Woooooo

12:11:30 From DiRuscio, Heather Frances to Everyone: wait, what’s 491?

12:11:40 From Gutzmann, Melanie to Everyone: "CS Skills for Simulation and Game Programming"

12:11:44 From DiRuscio, Heather Frances to Everyone: oohhhhh nice

12:12:07 From James Taylor to Everyone: Join us next term lol

12:12:24 From DiRuscio, Heather Frances to Everyone: mwahahaha looking into it now

12:13:36 From Barnes, Jack to Everyone: http://cs.oregonstate.edu/~mjb/cs491/

12:12:57 From Abhi Balijepalli to Everyone: CS491 is a lot of math right?

Some, but not a ton. Check the web page for details.

12:11:22 From Shuler, Patrick Logan to Everyone: When will project 1 grades be out?

Should be the next day or two.

12:20:00 From Hershberger, Jacob to Everyone: for GPU projects. Can I compile code on the flip server and execute on my computer for the projects?

Looks like the tools are indeed loaded there, so I think the answer is YES.

12:33:43 From Alice Li to Everyone: what is the INT unit in CUDA core?

It does integer arithmetic.

12:35:51 From Jacob Eckroth(He/him/his) to Everyone: "it's really fun to look at gpu data sheets* is possibly the nerdiest thing I have ever heard in a CS class"

But it is fun to have a sense of what a GPU’s performance will be. Better than most things to do in lockdown anyway.

12:39:33 From Morello, Zachary D to Everyone: Nobody uses OpenCL so my AMD card is useless for this lol

OpenCL is used when you want your GPU code to run on all graphics systems. You will use it in Project #6.
12:49:24 From Langen, Alexa to Everyone: Can you give an example of a computation that uses this form [Fused Multiply-Add, FMA], just for context?

Inside a for-loop: `sum = sum + A[i]*B[i];`

13:07:50 From Langen, Alexa to Everyone: I used flip for the first two assignments but was thinking of switching to visual studio now. How do we handle scripting so that we don’t have to change the number of threads/trials/etc. manually?

See the PowerShell noteset. It will fix you right up.

13:08:50 From Fogus, Joshua Ryan to Everyone: In Project 3, there is no default value of NowPrecip or NowTemp, in Ed you mentioned that these values are calculated based on NowMonth, but that’s done by the Watcher. The Grain function needs both of these values before the Watcher is finished calculating them. This produces weird initial values for me, is that to be expected or have I done something wrong?

In the main program, assign initial values for `NowMonth` and `NowYear`, and then use `NowMonth` to get the initial values for `NowPrecip` and `NowTemp`. After that, it’s the Watcher’s job.

13:12:21 From Shivam to Everyone: Thank you. Again for project 2, should we report the volume for the final iteration of the NUMTRIES or should we report the average volume, i.e., dividing the volume by the NUMTRIES?

All of your NUMTRIES will produce the same volume. The volume depends neither on NUMTRIES nor on NUMT, just NUMNODES.

13:13:16 From johns to Everyone: In what week did we go over coarse-grain parallelism?

It’s in the Parallel Background noteset.

13:14:15 From Huy Trieu to Everyone: For proj, 2, the final volume we get, we have to multiply by 2 correct?

Correct. I would just do it when you print. Instead of printing `volume`, print `2.*volume`.

13:14:36 From Headrick, David Joshua to Everyone: Are CUDA cores able to do all the same operations as an ALU in a CPUs?

Basically, yes. You will know this because your CUDA and OpenCL will look pretty C-ish.

13:15:41 From Langen, Alexa to Everyone: My MacBook Air obviously doesn’t have anything like the GPU from the demonstration. How do laptops handle graphics?

I would guess these days that it is difficult to buy a laptop that doesn’t come with some sort of graphics hardware in it. It might be on the CPU chip instead of being a discrete card, but it seems likely that something must be there.

13:30:30 From Moy, Kevin to Everyone: No lecture on Wednesday right?

Correct – no Live Lecture, but the Wednesday 12:00-2:00 time slot will instead be turned into my Office Hours.
13:31:29 From Shivam to Everyone: For project 2, should we report the volume for the final iteration of the NUMTRIES or should we report the average volume, i.e., dividing the volume by the NUMTRIES?

All of your NUMTRIES will produce the same volume. The volume depends neither on NUMTRIES nor on NUMT, just NUMNODES.

13:34:22 From Patrick Parks to Everyone: Project 2: Should the volume be changing with different NUMNODES?
13:34:51 From Shuler, Patrick Logan to Everyone: The volume should be changing, but as nodes increase the volume should approach some limit

Yes.

13:49:54 From Shen, Nuocheng to Everyone: I am not sure the relation for question 6 and 7. In 6 I calculate the Parallel Fraction by calculate Speed-up first. What is the speed-up question 7 ask for?

Max Speedup = \(1. / (1. - F_p)\) See the Amdahl’s law noteset for details.

13:56:33 From Patrick Parks to Everyone: Why are FPGA’s not used very often in the typical consumer PC? Couldn’t a FPGA customize its configuration to each program?

That’s a good question. I have often thought about what could be done with an FPGA combined with a CPU ad a GPU. OpenCL will run on FPGAs, so at the end of Project #6, you will have some sense about how you could program one.

14:08:21 From Saydemir, Abdullah to Everyone: for functional decomposition project
14:08:31 From Saydemir, Abdullah to Everyone: do we have to name the graph
14:08:35 From Saydemir, Abdullah to Everyone: and axes?

Do put numbers on the axis tick marks. Also, somewhere explain what curve color represents what quantity.