

INF236 Parallel programming 2018

The course covers parallel programming using shared memory (OpenMP), distributed memory (BSP), and GPU programming (CUDA). You can find information about these technologies online. We will mainly be looking at how “standard” algorithms can be made to run in parallel. This includes algorithms such as sorting, graph traversals, numerical algorithms etc.

We will be using C (or C++) for programming. You will be given a crash course in C programming at the start of the semester.

We will be using the following books:

An Introduction to Parallel Programming 1st Edition by Peter Pacheco.

Selected chapters from Parallel Scientific Computation by Rob Bisseling. The chapters from Bisseling's book will be handed out during class.

Professional CUDA C Programming by John Cheng, available online through <http://www.uib.no/ub>. Search for the book title in Oria, click “tilgjengelig online”, then go to Ebook Central. When accessing the book you must either be on the UiB net or connected by vpn to login.uib.no.

The final grade will be made up of three obligatory hand-ins, each one counting 16,66% of the total grade, pluss a written final exam counting 50%. You must receive a passing grade on the hand-ins to take the final exam. You must pass the final exam to pass the course.

We will be using the two computers lyng.ii.uib.no and brake.ii.uib.no for programming exercises.

You will be given an account on both of these. To access these machines you will need to use ssh (secure shell). This is standard software on most linux computers. If you are using a windows machine you could download and install PUTTY or if you are running Windows 10 use ssh natively <https://arstechnica.com/gadgets/2017/12/microsoft-quietly-snuck-an-ssh-client-and-server-into-the-latest-windows-10/>

You will need to use an editor such as “vim” or “emacs” when editing your files.

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