Teaching Parallel Programming Using an Interactive Parallelization Tool (IPT)

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Interactive Parallelization Tool (IPT)

If you know **what** to parallelize and **where**, IPT can help you with the **syntax** (of MPI/OpenMP/CUDA) and typical **code reengineering** for parallelization.

- Helps in learning parallel programming concepts without feeling burdened with the information on the syntax of MPI/OpenMP/CUDA.
- C and C++ languages supported as of now, Fortran will be supported in future.
IPT is a high-productivity tool for (1) semi-automatically parallelizing C/C++ code, (2) teaching parallel programming via demonstration

- Lowers the effort involved in parallel programming by more than 90% without significant loss in performance
- Deployed in the cloud – brings the parallel programming environment to a web browser https://ipt.tacc.cloud
- Being used for workforce development in HPC – used in parallel programming trainings for TACC/XSEDE users

Leverages NSF investments in other projects:
User Feedback

Do you have any feedback on IPT?

4 responses

- Surprisingly easy to use!
- It seems a very good tool. Very useful
- Great tool, support for Fortran will be appreciated!
- Excellent tool.

Would you be interested in using IPT to learn parallel programming (OpenMP, MPI, CUDA)?

19 responses

- Yes: 84.2%
- No: 15.8%
- Maybe: 0%

- 84.2% of the students in a class in which IPT was demoed, would like to continue using it for learning parallel programming, and 15.8% students were not sure about their decision
- All the students found IPT to be useful
- Across all the surveys conducted during IPT trainings, more than 80% people were interested in continuing to use IPT for their parallelization efforts
Thanks!

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Questions, Comments, Concerns?

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