

Report of activities in connection with SICSA DVF award,
Spring 2014

I am an economist with expertise in econometrics, and lead developer of the open-source econometrics program gretl (gretl.sf.net). For many years I've collaborated with two colleagues in Computer Science in Scottish universities, Greg Michaelson at Heriot Watt and Paul Cockshott at Glasgow. This spring I took advantage of academic leave from my home university to spend two months (March 11 to May 9) working in Scotland under SICSA's auspices.

My two main projects were (a) the parallelization of large econometric computations such as Monte Carlo analyses and bootstrapping via OpenMP, MPI and vectorization and (b) the enhancement and systematization of hansl, gretl's domain-specific scripting language.

As regards parallelization, I was able to run a number of informative experiments on the beowulf cluster and Intel Xeon Phi at Heriot Watt, one practical outcome being a patch for GNU libtool to permit cross-building of shared libraries for the Intel MIC architecture using Intel's icc plus autotools. I also had numerous useful discussions on this topic with my long-time collaborators as well as their colleagues, notably Greg Michaelson, Sven-Bodo Scholz, Hans-Wolfgang Loidl and Rob Stewart at Heriot Watt, and Paul Cockshott and Susanne Oehler at Glasgow. I'm in the process of writing up a document on best use of the Xeon Phi which I hope may be useful to members of both departments.

As regards hansl, my fellow gretl developer, Riccardo Lucchetti, and I gave a presentation at the SICSA-sponsored workshop on "Real World Domain Specific Languages" at Heriot Watt on May 1, the "slides" from which are available at <http://www.macs.hw.ac.uk/~rs46/dsl-workshop/> . Hans-Wolfgang Loidl found this particularly interesting and we have made arrangements to meet again later in the summer to explore possibilities for collaboration.

Professor Allin Cottrell
Department of Economics
Wake Forest University, North Carolina
29 May, 2014