

## How the Autumn Academy fits with my PhD project

I am very keen to attend the HPC Autumn Academy to improve my understanding of what affects the performance of my code, and how to write programs for parallel architectures.

Since last autumn, I have been doing a part-time PhD in Economics at UCL. My research is about the effect that the tax system has on individuals' education, employment and savings choices across their lifetimes.

I will be working with complex dynamic programming models that include many different state variables and considerable amounts of uncertainty. Estimating these models requires them to be solved and simulated repeatedly, typically a very computationally intensive task.

Models of this sort benefit significantly from the performance and parallel execution techniques included in the Autumn Academy programme. I have experience working in Fortran, including programming a dynamic model similar to the one described above. But I haven't been able to write the code to execute in parallel and I don't have a good understanding of how inefficient the code is. The Academy would be a great place for me to learn about both of these things.

After the Academy, I will have ready access to two different HPCs: my employer (the Institute for Fiscal Studies) has just bought a new HPC with 16 x 8 cores and I also have access to the HPC maintained by the UCL Economics Department. This will allow me to use what I learn straight away.