High Performance Computing Workshops for the Central Bank of Chile

Provider: QuantEcon

December 19, 2021

Course 1

Course 1 will provide

1. A total of 16 hours of remote or in person teaching, by mutual agreement, with an approximately even split between lectures and tutorials.
2. Non-graded tutorial and homework exercises.
3. Accompaning Jupyter notebooks containing both code and theory.
4. Access to a cloud computing option for all workshop participants.

Instructors:

1. John Stachurski (Australian National University)
2. Pablo Winant (CREST and ESCP Business School)

Dates:

- Either March 2022 or shortly thereafter.
- Exact dates to be determined by mutual agreement.

Topics:

- Introduction to Julia syntax and usage.

- Julia data structures and algorithms.
- Understanding the just-in-time compiler.
- Writing optimized, type-stable code in Julia.
- Linear algebra routines in Julia, with applications to estimation, optimization and networks.
- Simulation in Julia using Markov chains and time series models.
- Optimization and interpolation.
- Foundations of dynamic programming in Julia (search, optimal stopping, optimal savings problems) using policy and value iteration.

1 Course 2

Course 2 will provide

1. A total of 16 hours of remote or in person teaching, by mutual agreement, with an approximately even split between lectures and tutorials.
2. Non-graded tutorial and homework exercises.
3. Accompaning Jupyter notebooks containing both code and theory.
4. Access to a cloud computing option for all workshop participants.

Instructors:

1. John Stachurski (Australian National University)
2. Pablo Winant (CREST and ESCP Business School)

Dates:

- During 2022 with exact dates to be determined by mutual agreement.

Topics:

- Advanced dynamic programming in Julia.
- Heterogeneous agent models.
- Fixed point methods and financial networks.
- Global solution techniques.
- Deep learning methods.