



Paris-Grenoble, France



<https://www.nomadic-labs.com>



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Position

The consensus team of Nomadic Labs is looking for researchers with a PhD to work on analysing consensus algorithms from an economic perspective when considering rational agents.

- Where: Paris, Grenoble or remote
- Competitive salary
- Contract: full time, permanent position
- Opportunity to attend conferences

Requirements

- Expertise in game theory and/or microeconomics. Knowledge of probability theory and/or distributed systems is a plus.
- Motivation to write research papers and disseminate.
- Ability to work independently in uncharted territory.
- Some coding experience is a plus.

Applicants are encouraged to send a short cover letter showing how their profile would be a good match.

Consensus Team

The consensus team has started an economic analysis of Emmy+, the consensus algorithm used by the Tezos blockchain. The results are summarised in these two blogposts:

- [Analysis of Emmy+](#)
- [A new reward formula for Carthage](#)

Future work is to push such analyses further by finding the appropriate notions of equilibria, analysing new attack vectors, studying alternative incentive schemes, etc.

The consensus team has also worked on [Tenderbake](#), a classical BFT style consensus algorithm designed in such a way that it can be integrated with the Tezos blockchain. It would be of great interest to adapt the analyses above to the more challenging context of classical BFT style consensus algorithms while providing, whenever possible, formalisations using state-of-the-art tools (SMT solvers, theorem provers).

All publications will be available in open access. All the code developed will be Open Source under MIT license.

Nomadic Labs

Our expertise centers around research and development in programming languages, distributed systems, formal verification and cryptography. We believe our strength lies in a unique mix of skills and experience, allowing us to transfer the best of academic research into real world applications. As a member of the Tezos community, we are fortunate to collaborate with researchers from the French research institutes [Inria](#) and [CEA-List](#), [OCaml Labs](#) in Cambridge (UK), [Tarides](#) and [Ligo](#) in Paris, [Cryptium Labs](#) in Switzerland, [IMDEA](#) in Spain, [Concordium](#) in Denmark, [Obsidian Systems](#), [Cryptonomic](#), [TQ-Tezos](#), [camlCase](#) and [Runtime Verification](#) in the United States, [DaiLambda](#) in Japan and, last but not least, many individual developers.