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To: Swiss National Science Foundation

Please receive my letter of recommendation for Mr. Long Le, who is applying for a BRIDGE Proof of Concept grant. In summary, **I strongly support this application**. In the following, I substantiate my opinion considering (a) the skills of the applicant, (b) the characteristics and potential for impact of the project, and (c) the suitability of the applicant and working environment for the project.

I have known Mr. Le for five years, as my PhD student. His PhD defense is scheduled to take place within approximately one month from the writing of this letter. Mr. Le came to my group highly recommended. In my own experience, he largely exceeded my already high expectations. Mr. Le is a highly motivated, deeply skilled, and hard working scientist and engineer. He became quickly integrated in my group, despite the cultural and language differences. On the technical side, Mr. Le became an expert in scalable state machine replication, a topic at the core of his proposed project. One of his papers on the subject, "Dynamic scalable state machine replication," was nominated for the best paper award at the 46th IEEE/IFIP International Conference on Dependable Systems and Networks (DSN), the flagship conference on fault-tolerant systems.

The project proposed by Mr Le is ambitious, promising, and timely. It is ambitious in that the proposed oracle service must work across blockchain systems. Therefore, it assumes some level of interoperability among blockchain systems. Besides, it involves development for different environments. Given my experience with Mr. Le, I have no doubt he will face and properly address these challenges, as he has done many times during his PhD research. The project is promising and timely since blockchain technology has experienced fast and steady growth. Moreover, support for blockchain interoperability is becoming a reality. Soon we will be seen applications that involve multiple blockchains (see for example Cosmos IBC protocol). Consequently, the proposed oracle service will reach a large user base. This visionary project is well-posed to make a breakthrough in the "next generation" of blockchain applications. Finally, the business model of the proposal is simple and concrete, a major advantage in my opinion.

For all the reasons mentioned above, I fully support Mr. Le's project. I believe he is well posed to make this project successful, as I have witnessed his potential during his PhD research. He will also find very favorable working conditions at the Computer Systems Institute and the Università della Svizzera italiana.

Yours faithfully,

Fernando Pedone  
Professor