
Championing next-generation encryption techniques for the finance sector

Every year, as much as **\$2 trillion of illegally obtained money floods into the financial system.** Money laundering is a global problem and banks' efforts to tackle it can be hampered by the difficulty of sharing financial data, which is often highly sensitive and subject to privacy regulations such as GDPR.

However, a cutting-edge encryption technique called homomorphic encryption (HE) promises to allow banks and other financial institutions to share data more easily while preserving privacy. This year, the Turing collaborated with HSBC on a project to **find out just how widespread this technique is.**

The magic of HE is that it allows analysis to be performed on data while it is still safely encrypted. This means that a collaborator can make use of the data without being able to access the raw information, making it a more secure process for all involved. One application of HE could be in **identifying money launderers:** banks could use it to more effectively

share information about suspicious customer activity, allowing them to pool their intelligence and track down criminals.

At the request of HSBC, researchers in the Turing's finance and economics programme carried out an in-depth review of HE's current usage in the finance sector. The resulting paper identifies several countries that are leading the way in exploring HE (including the UK, Canada and South Korea) and one application that has already been implemented in the real world – **a collaboration between Duality and Oracle in the US.** There are still technological and regulatory obstacles to overcome before HE can be widely deployed, but the Turing and HSBC are now working on an HE tool with potential financial applications.

Read more: **Homomorphic encryption: the future of secure data sharing in finance?**

“Homomorphic encryption will make it easier for organisations to share sensitive data for the greater good. Our collaboration with HSBC is helping to scope out its huge potential in the finance sector.”



Carsten Maple

Turing Fellow and Professor of Cyber Systems Engineering at the University of Warwick

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