DEPARTMENT OF COMPUTER, CONTROL, AND MANAGEMENT ENGINEERING ANTONIO RUBERTI

SAPIENZA
UNIVERSITÀ DI ROMA

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FUB
Fondazione Ugo Bordoni
Research and Innovation

SILVIO MICALI

May 10, 2019

12:00

Aula Magna, DIAG - Department of Computer, Control, and Management Engineering Antonio Ruberti
Via Ariosto 25, Sapienza Università di Roma

ALGORAND
THE TRULY DISTRIBUTED LEDGER

BY
SILVIO MICALI
MIT

A *distributed ledger* is a tamperproof sequence of data that can be read and augmented by everyone. Distributed ledgers stand to revolutionize the way a democratic society operates. They secure all kinds of traditional transactions - such as payments, asset transfers, titling - in the exact order in which they occur; and enable totally new transactions - such as cryptocurrencies and smart contracts. They can remove intermediaries and usher in a new paradigm for trust. As currently implemented, however, distributed ledgers cannot achieve their enormous potential.

Algorand is an alternative, democratic, and efficient distributed ledger. Unlike prior ledgers based on 'proof of work', it dispenses with 'miners'. Indeed, *Algorand requires only a negligible amount of computation*. Moreover, its transaction history does not 'fork' with overwhelming probability: i.e., *Algorand guarantees the finality of all transactions*.

Finally, Algorand enjoys *flexible self-governance*. A successful society must be able to evolve, and a cryptocurrency cannot be an ocean liner on autopilot. By using its hallmark propose-and-agree process, Algorand can correct its course as necessary or desirable, without any 'hard forks'. Thanks to this core process, Algorand can routinely summon the contribution of each single 'token' for reaching any future decision.

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PROGRAM

12.00 **OPENING**

Eugenio Gaudio
Rector, Sapienza Università di Roma

Tiziana Catarci
Director of DIAG, Sapienza Università di Roma

Stefano Leonardi
Chair of Doctoral Program in Data Science, Sapienza Università di Roma

Luigi Vincenzo Mancini,
Chair of Master Degree in Cybersecurity, Sapienza Università di Roma

Antonio Sassano
President of Fondazione Ugo Bordoni

12.15 **KEYNOTE**

Silvio Micali, Founder of Algorand

*Silvio Micali is professor of computer science at MIT and one of the world's
authorities on cryptography, zero knowledge and distributed ledgers. He is the
recipient of the Turing Award in computer science, the Gödel Prize in theoretical
computer science, and the RSA prize in cryptography.*

13.15 **Q&A**

Free entrance, registration required