Research Activities in Software Engineering at the University of Cagliari

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Agile and Lean Methodologies

- The University of Cagliari has been the first European (and probably also world) University active in Agile Methodologies (AM), since 1998.

- We organized the first International Conference on Agile Methodologies and Extreme Programming, XP2000, in Cagliari in May 2000, still held today.

- AM are a way to systematically develop software in presence of changing requirements.

Software Metrics

- The Agile Group was among the first research groups to introduce and apply complex network metrics to software, since 2004.

- We also study other software-related networks, such as the developers' network

- We study also the message flows among developers and their moods, using Sentiment Analysis

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Blockchain research

- Agile Group was perhaps the first software engineering research groups to study cryptocurrencies and blockchain technology, since 2014

- Together with the other research group "Trustworthy Computational Societies", we have:

  - ➢ 9 works on major international journals, 44 contributions to major international conferences

  - ➢ More than 1000 citations on the Google Scholar database for works related to blockchain

  - ➢ We organized various International Workshops on Blockchain (WETSEB 2019 Montreal-Canada, IWBOSE 2019 Hangzhou-China, WETSEB 2018 Goteborg-Sweden, IWBOSE 2018 Campobasso-Italy, ...).

International awards

- Publication in 2015 of an article on Coindesk (the main international "magazine" on the blockchain) on the prediction of Bitcoin trading volumes through social network analysis

- Invitation to Prof. Tonelli to present a speech at the Blockchain Connect Conference in San Francisco, January, 11, 2019

- Award given at the same conference for being the authors of one of the "Top 50 Influential Papers in Blockchain of 2018", for a work by Marchesi, Tonelli, Pinna and Porru on the application of software engineering techniques to the development of blockchain applications

Other activities

- 10 research ongoing projects on blockchain, most in colla-boration with industries, for about two million Euros.

- Editors of some special issues in international journals regarding blockchain technology

- Organizers of the two "Blockchain Summer Schools" of 4 days each, held in Pula (CA) in June 2018 and 2019, each with the participation of over 30 PhD students, researchers and professionals

- Offering specific courses on DLT technologies for 24 credits in the MSc degree in Computer Science

Dissemination activities

- Agile Group, since its foundation in 1999, has been the recipient of many research grants, from EU, Italian Ministry for Research and Sardinia Region, for a total of about:

  ➢ 1 million Euros for scientific research projects

  ➢ 4 million Euros for applied research with industries

- Agile Group