Sergi Delgado Segura

CONTACT INFORMATION

Talaia Labs LTD.
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RESEARCH INTERESTS

Privacy, Bitcoin, Security, Networks, Distributed systems.

CURRENT POSITION

Talaia Labs, London, United Kingdom

Chief Executive Officer and Lead Bitcoin Dev **February 2020 – Present**

EDUCATION

Autonomous University of Barcelona, Bellaterra, Barcelona, Spain

Doctor of Philosophy in Computer Science **October 2015 – September 2018**

- Advisors: Prof. Jordi Herrera Joancomartí and Prof. Guillermo Navarro Arribas

University of Illinois at Urbana-Champaign, Champaign, Illinois, United States of America

Research stay **August 2017 – December 2017**

- Advisor: Prof. Andrew Miller

Open University of Catalonia, Barcelona, Spain

Master's Degree in Computer Security **September 2014 – July 2015**

Autonomous University of Barcelona, Bellaterra, Barcelona, Spain

Bachelor's degree in Computer Engineering **September 2008 – July 2014**

SELECTED PUBLICATIONS

Kappos, G., Yousaf, H., Piotrowska, A., Kanjalkar, S., **Delgado-Segura, S.**, Miller, A., and Meiklejohn, M. "An Empirical Analysis of Privacy in the Lightning Network", textslFinancial Cryptography and Data Security, 2021. https://link.springer.com/chapter/10.1007/978-3-662-64322-8_8

Delgado-Segura, S., Bakshi, S., Pérez-Solà, C., Litton, J., Pachulski, A., Miller, A., and Bhattacharjee, B. "TxProbe: Discovering Bitcoin's Network Topology Using Orphan Transactions", *Financial Cryptography and Data Security*, 2019. https://link.springer.com/chapter/10.1007%2F978-3-030-32101-7_32

Pérez-Solà, C., **Delgado-Segura, S.**, Navarro-Arribas, G. and Herrera-Joancomartí, J. (2018). "Another coin bites the dust: An analysis of dust in UTXO based cryptocurrencies", *Royal Society Open Science*, 2018. https://royalsocietypublishing.org/doi/10.1098/rsos.180817

Pérez-Solà, C., **Delgado-Segura, S.**, Navarro-Arribas, G. and Herrera-Joancomartí, J. (2017). "Double-spending Prevention for Bitcoin zero-confirmation transactions", *International Journal of Information Security*, 2018. https://doi.org/10.1007/s10207-018-0422-4

Delgado-Segura, S., Pérez-Solà, C., Herrera-Joancomartí, J., and Navarro-Arribas, G. (2016). "Bitcoin Private Key Locked Transactions", *Information Processing Letters*, 2018. https://doi.org/10.1016/j.ipl.2018.08.004

Delgado-Segura, S., Pérez-Solà, C., Navarro-Arribas, G, Herrera-Joancomartí, J. (2018). "Analysis of the Bitcoin UTXO set", *The 5th Workshop on Bitcoin and Blockchain Research (BITCOIN'18)*, 2018. http://fc18.ifca.ai/bitcoin/papers/bitcoin18-final6.pdf

Delgado-Segura, S., Pérez-Solà, C., Herrera-Joancomartí, J, Navarro-Arribas, G, and Borrell J. (2018). "Cryptocurrency networks: a new P2P paradigm", *Mobile Information Systems*, 2018. http://dx.doi.org/doi:10.1155/2018/2159082

Delgado-Segura, S., Pérez-Solà, C., Navarro-Arribas, G, and Herrera-Joancomartí, J. (2017). "A fair protocol for data trading based on Bitcoin transactions", *Future Generation Computer Systems*, 2017, ISSN 0167-739X. http://dx.doi.org/10.1016/j.future.2017.08.021.

Delgado-Segura, S., Tanas, C. and Herrera-Joancomartí, J. (2016). "Reputation and Reward: Two Sides of the Same Bitcoin", *Sensors*, 16(6), p.776. http://www.mdpi.com/1424-8220/16/6/776

Tanas, C., **Delgado-Segura, S.** and Herrera-Joancomartí, J. (2015). "An Integrated Reward and Reputation Mechanism for MCS Preserving Users' Privacy",

International Workshop on Data Privacy Management (pp. 83-99). Springer International Publishing. https://link.springer.com/chapter/10.1007/978-3-319-29883-2_6

Teaching

University College London, London, United Kingdom

Teaching Assistant: Blockchain Technologies **October 2018 – September 2020**

Autonomous University of Barcelona, Bellaterra, Barcelona, Spain

Teaching Assistant: Information Security **October 2017 – September 2018**

Autonomous University of Barcelona, Bellaterra, Barcelona, Spain

Teaching Assistant: Information Security **October 2016 – September 2017**

Autonomous University of Barcelona, Bellaterra, Barcelona, Spain

Teaching Assistant: Computer Networks **October 2015 – September 2016**

Other professional experience

PISA Research, London, United Kingdom

Chief Security Officer and Bitcoin Lead Dev **March 2019 – January 2020**

University College London, London, United Kingdom

Research Associate (Postdoc), Information Security Group **October 2018 – September 2019**

Autonomous University of Barcelona, Barcelona, Spain

Research technician, dEIC **September 2014 – September 2015**

Autonomous University of Barcelona, Barcelona, Spain

System administrator **July 2013 – September 2014**

Programming

Rust, Python, Bitcoin Scripting, LaTeX 2_ε, Bash, Docker.

Projects

The Eye of Satoshi https://github.com/talaia-labs/rust-teos

The Eye of Satoshi is a Lightning watchtower compliant with BOLT13, written in Rust. A Python version is also available at https://github.com/talaia-labs/python-teos

bitcoin_tools https://github.com/sr-gi/bitcoin_tools

Bitcoin tools is a Python library created for teaching and researching purposes. Its main objective is twofold. First, it aims to ease the understanding of Bitcoin transaction creation, by using well-documented and easy-to-understand python code. Second, it aims to provide a tool able to create custom transactions/scripts. Either scriptSig and scriptPubKey can be built from human-readable strings created using Script syntax.

STATUS `https://git.io/vAzHL`

STATUS (STatistical Analysis Tool for Utxo Set) is an open-source tool that provides an easy way to access, decode and analyze data from Bitcoin's utxo set.

STATUS is coded in Python 2 and works for both the existing versions of Bitcoin Core's utxo set, that is, the first defined format (versions 0.8 - 0.14) and the recently defined one (version 0.15).

STATUS reads from a LevelDB folder (usually located under .bitcoin/chainstate) and parses all the utxo entries into a json file. From the parsed file, STATUS allows you to perform two type of analysis, a utxo-based one, and a transaction-based one, by decoding all the parsed information from the chainstate.

Public profiles

GitHub `https://github.com/sr-gi`

Twitter `https://twitter.com/sr_gi`

Bitcoin Stack Exchange `https://bitcoin.stackexchange.com/users/30668/sr-gi`