

Nikolaj Ignatieff Schwartzbach

✉ nikolaj@ignatieff.io

🌐 ignatieff.io



Education

- 2018 – 2023 **Ph.D., Aarhus University** in Cryptography (advised by Ivan Damgård).
Thesis title: *Smart Contracts and Rationality*.
- 2018 – 2021 **M.Sc. Computer Science, Aarhus University**.
- 2015 – 2018 **B.Sc. Computer Science, Aarhus University**.
Thesis title: *Agreement in Distributed Systems*.

Employment History

- 2023 – **Postdoctoral Researcher**, Bocconi University.
- 2017 – 2021 **Student Programmer**, Aarhus University.
- 2016 – 2021 **Teaching Assistant**, Aarhus University.
Courses: *Introduction to Programming, Programming Languages, Programming for High School Teachers, Optimization, Machine Learning*

Research Publications

Conference Proceedings

- 1 D. Landis and **N. I. Schwartzbach**, “Which Games are Unaffected by Absolute Commitments?” To appear in *The 23rd International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS’24)*, 2024.
- 2 R. Bourneuf, L. Folwarczny, P. Hubáček, A. Rosen, and **N. I. Schwartzbach**, “PPP-Completeness and Extremal Combinatorics,” in *14th Innovations in Theoretical Computer Science Conference (ITCS 2023)*, Y. Tauman Kalai, Ed., ser. Leibniz International Proceedings in Informatics (LIPIcs), vol. 251, Dagstuhl, Germany: Schloss Dagstuhl – Leibniz-Zentrum für Informatik, 2023, 22:1–22:20, ISBN: 978-3-95977-263-1. [DOI: 10.4230/LIPIcs.ITCS.2023.22](https://doi.org/10.4230/LIPIcs.ITCS.2023.22).
- 3 I. Caragiannis and **N. I. Schwartzbach**, “Outsourcing Adjudication to Strategic Jurors,” in *Proceedings of the Thirty-Second International Joint Conference on Artificial Intelligence, IJCAI-23*, E. Elkind, Ed., Main Track, International Joint Conferences on Artificial Intelligence Organization, Aug. 2023, pp. 2546–2553. [DOI: 10.24963/ijcai.2023/283](https://doi.org/10.24963/ijcai.2023/283).
- 4 D. Landis and **N. I. Schwartzbach**, “Stackelberg Attacks on Auctions and Blockchain Transaction Fee Mechanisms,” Sep. 2023, ISBN: 9781643684369. [DOI: 10.3233/FAIA230501](https://doi.org/10.3233/FAIA230501).
- 5 **N. I. Schwartzbach**, “Payment Schemes from Limited Information with Applications in Distributed Computing,” in *Proceedings of the 23rd ACM Conference on Economics and Computation*, ser. EC ’22, Boulder, CO, USA: Association for Computing Machinery, 2022, pp. 129–149, ISBN: 9781450391504. [DOI: 10.1145/3490486.3538342](https://doi.org/10.1145/3490486.3538342).
- 6 I. B. Damgård, B. Li, and **N. I. Schwartzbach**, “More Communication Lower Bounds for Information-Theoretic MPC,” in *2nd Conference on Information-Theoretic Cryptography (ITC 2021)*, S. Tessaro, Ed., ser. Leibniz International Proceedings in Informatics (LIPIcs), vol. 199, Dagstuhl, Germany: Schloss Dagstuhl – Leibniz-Zentrum für Informatik, 2021, 2:1–2:18, ISBN: 978-3-95977-197-9. [DOI: 10.4230/LIPIcs.ITC.2021.2](https://doi.org/10.4230/LIPIcs.ITC.2021.2).




- 7 M. Hall-Andersen and **N. I. Schwartzbach**, “Game Theory on the Blockchain: A Model for Games with Smart Contracts,” in *Algorithmic Game Theory*, I. Caragiannis and K. A. Hansen, Eds., Cham: Springer International Publishing, 2021, pp. 156–170, ISBN: 978-3-030-85947-3.
- 8 **N. I. Schwartzbach**, “An Incentive-Compatible Smart Contract for Decentralized Commerce,” in *2021 IEEE International Conference on Blockchain and Cryptocurrency (ICBC)*, 2021, pp. 1–3. [DOI](#): 10.1109/ICBC51069.2021.9461077.

Miscellaneous

Research Visits

- 2022  **Alon Rosen**, Bocconi University (January to July).
 **Prashant Nalini Vasudevan**, National University of Singapore (September to November).

Grants

-  **STIBOFONDEN**. Travel grant for visiting Alon Rosen (€9k).
2023  **Ethereum Foundation**. ROP-6 from Robust Incentives Group (\$7.5k).
 **Flashbots Research**. FRP-41 from Flashbots Research (\$7.5k).