

## Teză de doctorat

Titlu: Self-Healing and Secure Low-Power Memory Systems

Perioada: 2011 – 2017

Conducător științific: Prof. Dr. Ing. Salvador Manich, Prof. Dr. Ing. Joan Figueras

Domeniu: Inginerie Electronică

Instituția: Universitatea Politehnică din Catalunya BarcelonaTECH, Departamentul de Inginerie Electronică, Barcelona, Spania

Titlu: Self-Healing For Low-Power Systems

Perioada: 2009 – 2012

Conducător științific: Prof. Dr. Ing. Liviu Miclea

Domeniu: Ingineria Sistemelor

Instituția: Universitatea Tehnică din Cluj-Napoca, Facultatea de Automatică și Calculatoare, Cluj-Napoca, România

## Cărți

1. Oprișa, C., Hangan, A, **Neagu, M.**, Cebuc, E., Sebestyen, G., Programare în Limbaj de Asamblare, Îndrumător de laborator, UTPRESS, Cluj-Napoca, 2018, ISBN 978-606-737-333-2
2. **Neagu, M.**, Manich, S., Self-healing and Secure Low-Power Memory Systems, LAP LAMBERT Academic Publishing, 2017, ISBN 978-3-659-64724-6

## Articole publicate în reviste ISI

3. **Neagu, M.**, Salvador, M., „Defending cache memory against cold-boot attacks boosted by power or EM radiation analysis”, Microelectronics Journal, Volume 62, pp. 85-98, 2017, ISSN 0026-2692, factor de impact 1.332
4. **Neagu, M.**, Miclea, L., Salvador, M., “Improving Security in Cache Memory by Power Efficient Scrambling Technique”, IET Computers & Digital Techniques, Volume 9, Issue 6, pp. 283 – 292, 2015, ISSN 1751-8601, factor de impact 0.639

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5. **Neagu, M.**, „Sustainable Smart Cities: A Fog Computing Framework for a Smart Urban Transport Network”, Studia Universitatis “Vasile Goldis” Arad Economics Series, Vol. 28, No. 4, pp. 68 – 80, 2018, ISSN 1584 – 2339
6. **Neagu, M.**, Teodoru, M.C., “Testing the Engel's law in the consumption pattern of Romanian population”, Studia Universitatis “Vasile Goldis” Arad Economics Series, Vol. 27, No. 3, pp., 33 – 53, 2017, ISSN 1584 – 2339
7. Neagu, O., **Neagu, M.**, „Regional Specialisation and Economic Concentration in Romania”, Studia Universitatis “Vasile Goldis” Arad Economics Series, Vol. 26, No. 3, pp., 1 – 17, 2016, ISSN 1584 – 2339
8. **Neagu, M.**, Miclea, L., “On-Line Error Detecting Codes for DRAMs”, ACAM Journal: Automation, Computers, Applied Mathematics, Vol. 20, Nr. 2, pp. 133 – 138, 2011, ISSN 1221-437X

**Articole publicate în lucrări ale principalelor conferințe internaționale de specialitate (indexate IEEE, Scopus, Google Scholar)**

9. **Neagu, M.**, Rodríguez Montañés, R., Arumi Delgado, D., Manich Bou, S., „Random masking interleaved scrambling technique as a countermeasure for DPA/DEMA attacks in cache memories”, TRUDEVICE - 6th Conference on Trustworthy Manufacturing and Utilization of Secure Devices (TRUDEVICE 2016), Barcelona, Spain, 14-16 November, 2016
10. **Neagu, M.**; Miclea, L.; Manich, S.; „Defeating Simple Power Analysis Attacks in Cache Memories”, in Proceedings of the 2015 30<sup>th</sup> Conference on Design of Circuits and Integrated Systems (DCIS), pp. 1 – 6, Estoril, Portugal, 2015
11. **Neagu, M.**; Miclea, L.; Manich, S.; "On the use of error detecting and correcting codes to boost security in caches against side channel attacks", Workshop on Trustworthy Manufacturing and Utilization of Secure Devices", Proceedings of the 2015 Design, Automation & Test in Europe Conference & Exhibition: 9-13 March 2015, Grenoble, France, pp. 1-6, 2015
12. **Neagu, M.**, Sebestyen, G., "Increasing Memory Security through Information Entropy Models", 15th IEEE International Symposium on Computational Intelligence and Informatics (CINTI), pp. 49-53, Budapest, Hungary, 2014
13. **Neagu, M.**, Miclea, L., "Protecting Cache Memories through Data Scrambling Technique", 10<sup>th</sup> International Conference on Intelligent Computer Communication and Processing (ICCP), pp. 297 – 303, Cluj-Napoca, Romania, 2014
14. **Neagu, M.**, Miclea, L., Salvador, M., "Interleaved Scrambling Technique: A Novel Low-Power Security Layer for Cache Memories", Proceedings of the 2014 19th IEEE European Test Symposium (ETS), Paderborn, Germany, pp. 241 – 243, 2014
15. **Neagu, M.**, Miclea, L., "Data Scrambling in Memories: A Security Measure", Proceedings of the 2014 19th IEEE International Conference on Automation, Quality and Testing, Robotics (AQTR), pp. 1 – 6, Cluj-Napoca, Romania, 2014
16. **Neagu, M.**, Miclea, L., "Modified Berger Codes for On-Line DRAM Repair Strategies", Proceedings of the 2012 18th IEEE International Conference on Automation, Quality and Testing, Robotics (AQTR), Cluj-Napoca, Romania, pp. 296 – 301, 2012
17. **Neagu, M.**, Moiş, G., Miclea, L., "On-Line Error Detection for Tuning Dynamic Frequency Scaling", Proceedings of the 2012 18th IEEE International Conference on Automation, Quality and Testing, Robotics (AQTR), Cluj-Napoca, Romania, pp. 290 – 295, 2012
18. Folea, S., **Neagu, M.**, Moiş, G., "Multi-Purpose Sensor Platform Development", Proceedings of the 2012 18th IEEE International Conference on Automation, Quality and Testing, Robotics (AQTR), Cluj-Napoca, Romania, pp. 341-346, 2012
19. **Neagu, M.**, Miclea, L., Figueras, J., "Unidirectional error detection, localization and correction for DRAMs: Application to on-line DRAM repair strategies", Proceedings of the 2011 IEEE 17th International On-Line Testing Symposium (IOLTS), Athens, Greece, pp. 264-269, 2011
20. Lazăr, M.G., Vălean, H., **Neagu, M.**, Miclea, L., "Biodiversity management system in Rodna Mountains National Park", Proceedings of IEEE International Conference on Automation Quality and Testing Robotics (AQTR), Cluj-Napoca, Romania, Vol. 3, pp. 1 – 5, 2010

## Alte lucrări și contribuții științifice

21. Neagu, O.; Neagu, M.; „Empirical Evidence on Wage Divergence in the Case of Romania”, Proceedings of 2<sup>nd</sup> International Conference on Regional Sustainable Development – Through Competitiveness, Innovation and Human Capital, Satu Mare, Romania, 2015
22. Neagu, O., Neagu, M.; “Economic freedom and growth in Eastern Europe-the effect of foreign direct investment (FDI). A panel data estimation”, Proceedings of 2<sup>nd</sup> International Conference on Recent Advances in Economic and Social Research, Bucharest, Romania, 2016
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24. Neagu, O., Neagu, M.; „Smart Cities And The Concept Of Internet Of Things”, Proceedings of 4<sup>th</sup> International Conference on Regional Sustainable Development – Through Competitiveness, Innovation and Human Capital, Satu Mare, Romania, 2017
25. Neagu, M.; „Challenges Of Internet Of Things In Developing Countries”, Proceedings of 5<sup>th</sup> International Conference on Regional Sustainable Development – Through Competitiveness, Innovation and Human Capital, Satu Mare, Romania, 2018

## Alte lucrări și contribuții științifice (acceptate, în curs de publicare)

- Neagu, M., Manich, S., Hardware Level Security Techniques Against Reading of Cache Memory Sensitive Data, capitol în cartea Advances in Microelectronics: Reviews, Book Series, Vol. 2, IFSA Publishing, Barcelona, Spain, 2018, acceptat și în curs de publicare
- Neagu, M., Time performance and power efficiency of Interleaved Scrambling Technique for cache memories, ACAM Journal: Automation, Computers, Applied Mathematics, ISSN 1221-437X, acceptată și în curs de publicare

## Lucrări de laborator

1. Neagu, M., Hâangan, A., Sebestyen, G., Structure of Computer Systems, lucrare de laborator 03 – Programming elements in VHDL, format electronic, <http://users.utcluj.ro/~madalin/structure-of-computer-systems.html>
2. Neagu, M., Hâangan, A., Sebestyen, G., Structure of Computer Systems, lucrare de laborator 04 – Design of ALU components, format electronic, <http://users.utcluj.ro/~madalin/structure-of-computer-systems.html>
3. Neagu, M., Hâangan, A., Sebestyen, G., Structure of Computer Systems, lucrare de laborator 05 – FPGA synthesis, format electronic, <http://users.utcluj.ro/~madalin/structure-of-computer-systems.html>
4. Hâangan, A., Neagu, M., Sebestyen, G., Structure of Computer Systems, lucrare de laborator 10 – Memory design - Part 1, format electronic, <http://users.utcluj.ro/~madalin/structure-of-computer-systems.html>

5. Hâangan, A., Neagu, M., Sebestyen, G., Structure of Computer Systems, lucrare de laborator 11 – Memory design - Part 2, format electronic, <http://users.utcluj.ro/~madalin/structure-of-computer-systems.html>
6. Hâangan, A., Neagu, M., Sebestyen, G., Sisteme cu Microprocesoare, lucrare de laborator 1 – Structura unui calculator. Măsurarea performanțelor unui calculator, format electronic, <http://users.utcluj.ro/~madalin/microprocessor-based-systems.html>
7. Hâangan, A., Neagu, M., Sebestyen, G., Sisteme cu Microprocesoare, lucrare de laborator 2 – Arhitectura ISA x86, format electronic, <http://users.utcluj.ro/~madalin/microprocessor-based-systems.html>
8. Hâangan, A., Neagu, M., Sebestyen, G., Sisteme cu Microprocesoare, lucrare de laborator 3a – Dezvoltarea de programe în limbajul de asamblare ISA x86, format electronic, <http://users.utcluj.ro/~madalin/microprocessor-based-systems.html>
9. Hâangan, A., Neagu, M., Sebestyen, G., Sisteme cu Microprocesoare, lucrare de laborator 6 – Proiectarea modulelor de memorie, format electronic, <http://users.utcluj.ro/~madalin/microprocessor-based-systems.html>
10. Hâangan, A., Neagu, M., Sebestyen, G., Sisteme cu Microprocesoare, lucrare de laborator 8 – Proiectarea interfetelor de intrare/iesire, format electronic, <http://users.utcluj.ro/~madalin/microprocessor-based-systems.html>
11. Hâangan, A., Neagu, M., Sebestyen, G., Programare în Limbaj de Asamblare, lucrare de laborator 2 – Arhitectura Intel x86 si elemente de bază ale limbajului de asamblare, în îndrumator de laborator, UTPRESS, Cluj-Napoca, 2018, ISBN 978-606-737-333-2
12. Hâangan, A., Neagu, M., Sebestyen, G., Programare în Limbaj de Asamblare, lucrare de laborator 3 – Setul de instructiuni al familiei de procesoare Intel x86, în îndrumator de laborator, UTPRESS, Cluj-Napoca, 2018, ISBN 978-606-737-333-2
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14. Hâangan, A., Neagu, M., Sebestyen, G., Programare în Limbaj de Asamblare, lucrare de laborator 6 – Utilizarea bibliotecilor de functii, în îndrumator de laborator, UTPRESS, Cluj-Napoca, 2018, ISBN 978-606-737-333-2
15. Hâangan, A., Neagu, M., Sebestyen, G., Programare în Limbaj de Asamblare, lucrare de laborator 8 – Utilizarea coprocesorului matematic, în îndrumator de laborator, UTPRESS, Cluj-Napoca, 2018, ISBN 978-606-737-333-2

## Participari în proiecte

1. TRAMS: Terascale Reliable Adaptive Memory Systems (Referinta: FP7-248789), proiecte internațional, perioada 2010 – 2011, membru
2. Análisis y técnicas de mejora de la robustez y seguridad de circuitos nanométricos en presencia de ataques, defectos, variabilidad y Aging (TEC2013-J41209-P), proiect internațional, perioada 2014 – 2017, membru

15-01-2019

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## Lucrări de laborator

1. **Neagu, M., Hângan, A., Sebestyen, G.,** Structure of Computer Systems, lucrare de laborator 03 – Programming elements in VHDL, format electronic, <http://users.utcluj.ro/~madalin/structure-of-computer-systems.html>
2. **Neagu, M., Hângan, A., Sebestyen, G.,** Structure of Computer Systems, lucrare de laborator 04 – Design of ALU components, format electronic, <http://users.utcluj.ro/~madalin/structure-of-computer-systems.html>
3. **Neagu, M., Hângan, A., Sebestyen, G.,** Structure of Computer Systems, lucrare de laborator 05 – FPGA synthesis, format electronic, <http://users.utcluj.ro/~madalin/structure-of-computer-systems.html>
4. **Hângan, A., Neagu, M., Sebestyen, G.,** Structure of Computer Systems, lucrare de laborator 10 – Memory design - Part 1, format electronic, <http://users.utcluj.ro/~madalin/structure-of-computer-systems.html>
5. **Hângan, A., Neagu, M., Sebestyen, G.,** Structure of Computer Systems, lucrare de laborator 11 – Memory design - Part 2, format electronic, <http://users.utcluj.ro/~madalin/structure-of-computer-systems.html>
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9. **Hângan, A., Neagu, M., Sebestyen, G.,** Sisteme cu Microprocesoare, lucrare de laborator 6 – Proiectarea modulelor de memorie, format electronic, <http://users.utcluj.ro/~madalin/microprocessor-based-systems.html>
10. **Hângan, A., Neagu, M., Sebestyen, G.,** Sisteme cu Microprocesoare, lucrare de laborator 8 – Proiectarea interfetelor de intrare/iesire, format electronic, <http://users.utcluj.ro/~madalin/microprocessor-based-systems.html>
11. **Hângan, A., Neagu, M., Sebestyen, G.,** Programare în Limbaj de Asamblare, lucrare de laborator 2 – Arhitectura Intel x86 si elemente de bază ale limbajului de asamblare, în îndrumator de laborator, UTPRESS, Cluj-Napoca, 2018, ISBN 978-606-737-333-2
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13. **Hângan, A., Neagu, M., Sebestyen, G.,** Programare în Limbaj de Asamblare, lucrare de laborator 4 – Modurile de adresare ale procesorului Intel x86, în îndrumator de laborator,

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15.01.2019

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