

# LISTA DE LUCRĂRI

PAVĂL, D. Silviu-Dumitru

## 1. Teză de doctorat

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- A1.** Silviu-Dumitru Pavăl, *Image Segmentation Techniques Applied to Autonomous Driving* (Tehnici de segmentare a imaginilor pentru conducerea autonomă a vehiculelor), iulie 2023, Universitatea Tehnică „Gheorghe Asachi” din Iași, Facultatea de Automatică și Calculatoare, Domeniul Calculatoare și Tehnologia Informației.  
Conducător de doctorat: Prof. univ. dr. Mitică Craus.

## 2. Cărți / Capitole de cărți

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- B1.** Costică Moroșanu și Silviu Pavăl, *Sisteme de operare: instalare, programare, utilizare Linux*, Editura Universității „Alexandru Ioan Cuza” Iași, ISBN 973-703-143-1, 374 p., 2006.

## 3. Lucrări științifice

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### 3.1 Articole publicate în reviste cotate ISI / Web of Science

- C1.** Marius Dabija, Lucian Eva, Constantin Fetecau, Călin Moroșanu, Silviu-Dumitru Pavăl *On the numerical approximation of the solution to a nonlinear second-order anisotropic reaction-diffusion model. Applications in medical image processing*, Discrete and Continuous Dynamical Systems-S, 2026.  
DOI: <https://doi.org/10.3934/dcdss.2026037>
- C2.** Adrian Claudiu Carp, Bogdan Veliceasa, Dmour Awad, Alexandru Filip, Mihaela Perțea, Norin Fornă, Bogdan Puha, Ștefan Dragoș Țirnovanu, Mihnea Theodor Sîrbu, Silviu Dumitru Pavăl, Paul Dan Sîrbu, *Biomechanical Comparison of Three Fixation Constructs for Tile Type C1.2 Pelvic Ring Fractures: A Finite Element Analysis*, Life, vol. 16, nr. 2, art. 336, 2026.  
DOI: <https://doi.org/10.3390/life16020336>
- C3.** Tudor Barbu, Costică Moroșanu, Silviu-Dumitru Pavăl, *A Fokker-Planck Model for Optical Flow Estimation and Image Registration*, Mathematics, vol. 13, nr. 17, art. 2807, 2025.  
DOI: <https://doi.org/10.3390/math13172807>
- C4.** Mihail-Cristian Heghea, Silviu-Dumitru Pavăl, Vasile-Ion Manta, *Reaction-Diffusion Applications to Data Dynamic Clustering and Partitioning*, Discrete and Continuous Dynamical Systems-S, 2025.  
DOI: <https://doi.org/10.3934/dcdss.2025042>

- C5.** Adrian Alexandrescu, Delia-Elena Bărbuță, Cristian Nicolae Buțincu, Alexandru Archip, Silviu-Dumitru Pavăl, Cătălin Mironceanu, Gabriel-Alexandru Scînteie *Design Analysis for a Distributed Business Innovation System Employing Generated Expert Profiles, Matchmaking, and Blockchain Technology*, Future Internet, vol. 17, nr. 4, art. 171, 2025.  
DOI: <https://doi.org/10.3390/fi17040171>
- C6.** Constantin Fetecău, Costică Moroșanu, Silviu-Dumitru Pavăl, *On the convergence of an approximation scheme of fractional-step type, associated to a nonlinear second-order system with coupled in-homogeneous dynamic boundary conditions*, Axioms, vol. 13, nr. 5, art. 286, 2024.  
DOI: <https://doi.org/10.3390/axioms13050286>
- C7.** Roxana Maria Pînzaru, Silviu-Dumitru Pavăl, Mihaela Perțea, Ovidiu Alexa, Paul Dan Sîrbu, Alexandru Filip, Adrian Claudiu Carp, Liliana Savin, Norin Forna, Bogdan Veliceasa, *Biomechanical Comparison of Conventional Plate and the C-Nail® System for the Treatment of Displaced Intra-Articular Calcaneal Fractures: A Finite Element Analysis*, Journal of Personalized Medicine, vol. 13, nr. 4, art. 587, WOS:000977522200001, 2023.  
DOI: <https://doi.org/10.3390/jpm13040587>
- C8.** Silviu-Dumitru Pavăl și Mitică Craus, *Reaction-Diffusion Model Applied to Enhancing U-Net Accuracy for Semantic Image Segmentation*, Discrete and Continuous Dynamical Systems-S, vol. 16, nr. 1, pp. 54–74, WOS:000835039900001, 2023.  
DOI: <https://doi.org/10.3934/dcdss.2022142>
- C9.** Silviu-Dumitru Pavăl, Alex Vasilică și Alin Adochiei, *Qualitative and Quantitative Analysis of a Nonlinear Second-Order Anisotropic Reaction-Diffusion Model of an Epidemic Infection Spread*, Discrete and Continuous Dynamical Systems-S, vol. 16, nr. 1, WOS:000789138100001, 2023.  
DOI: <https://doi.org/10.3934/dcdss.2022094>
- C10.** Costică Moroșanu și Silviu Pavăl, *Rigorous Mathematical Investigation of a Nonlocal and Nonlinear Second-Order Anisotropic Reaction-Diffusion Model: Applications on Image Segmentation*, Mathematics, vol. 9, nr. 1, art. 91, WOS:000606268800001, 2021.  
DOI: <https://doi.org/10.3390/math9010091>
- C11.** Mitică Craus și Silviu-Dumitru Pavăl, *An Accelerating Numerical Computation of the Diffusion Term in a Nonlocal Reaction-Diffusion Equation*, Mathematics, vol. 8, nr. 12, art. 2111, WOS:000601949800001, 2020.  
DOI: <https://doi.org/10.3390/math8122111>
- C12.** Costică Moroșanu, Silviu Pavăl și Cătălin Trenchea, *Analysis of Stability and Error Estimates for Three Methods Approximating a Nonlinear Reaction-Diffusion Equation*, Journal of Applied Analysis and Computation, vol. 7, nr. 1, pp. 1–19, WOS:000385782900001, 2017.  
DOI: <https://doi.org/10.11948/2017001>

### 3.2 Articole publicate în reviste indexate BDI / alte reviste de specialitate

- D1. Mihai Dabija, Larisa Eva, Costică Moroşanu, Silviu-Dumitru Pavăl, *A Reaction-Diffusion Model for Simulating Brain Activity and the BOLD Signal in fMRI*, ROMAI Journal, vol. 20, nr. 2, pp. 161, 2024.
- D2. Silviu Pavăl, *Numerical Approximation for a Nonlocal Reaction-Diffusion Equation Supplied with Non-Homogeneous Neumann Boundary Conditions; Case 1D*, ROMAI Journal, vol. 15, nr. 1, pp. 83–93, 2019.
- D3. Costică Moroşanu și Silviu Pavăl, *On the Numerical Approximation of a Nonlinear Reaction-Diffusion Equation with Non-Homogeneous Neumann Boundary Conditions. Case 1D*, ROMAI Journal, vol. 15, nr. 2, 2019.

### 3.3 Articole/studii publicate în volumele unor manifestări științifice indexate ISI / BDI

- E1. Silviu-Dumitru Pavăl, Adina-Andreea Nedelcu, *Design Guidelines for an LRS-Enabled Electronic Voting System Using Cryptowallet Identities*, 2025 5th International Conference on Electrical, Computer, Communications and Mechatronics Engineering (ICECCME), IEEE, 2025.  
DOI: <https://doi.org/10.1109/ICECCME64568.2025.11277621>
- E2. Andrei Alexandrescu, Dragoş-Eduard Bărbuță, Cătălin-Nicolae Buţincu, Gheorghe-Alexandru Scînteie, Silviu-Dumitru Pavăl et al., *SPARK-IT: A Decentralized Blockchain and AI-Driven Ecosystem for Trusted and Transparent Innovation Collaboration*, 2025 29th International Conference on System Theory, Control and Computing (ICSTCC), Cluj-Napoca, Romania, pp. 227–232, IEEE, 2025.  
DOI: <https://doi.org/10.1109/ICSTCC66753.2025.11240491>
- E3. Mihail-Cristian Heghea, Silviu-Dumitru Pavăl, Vasile-Ion Manta, *Numerical Simulation of Reaction-Diffusion Model for Graph-Based Data Clustering*, 2025 29th International Conference on System Theory, Control and Computing (ICSTCC), Cluj-Napoca, Romania, IEEE, 2025.  
DOI: <https://doi.org/10.1109/ICSTCC66753.2025.11240492>
- E4. Silviu-Dumitru Pavăl, Cristian-Mihai Amarandei, Elena Şerban și Cătălin Mironceanu, *Autoscaling MPI Cluster Using OpenMPI and OpenStack Cloud Services*, 27th International Conference on System Theory, Control and Computing (ICSTCC), Timișoara, Romania, IEEE, 2023.
- E5. Silviu-Dumitru Pavăl, *A Comparative Analysis of  $L_1$ ,  $L_2$ , and  $L_\infty$  Norms for Image Segmentation Algorithms: Sobel, Prewitt, and Canny*, Conference on Applied and Industrial Mathematics (CAIM), pp. 39–39, 2023.
- E6. Silviu-Dumitru Pavăl și Mitică Craus, *Comparative Analysis of Deep Semantic Segmentation Networks Sensitivity to Input Noise*, 26th International Conference on System Theory, Control and Computing (ICSTCC), IEEE, 2022.
- E7. Silviu-Dumitru Pavăl și Mitică Craus, *Parallel Algorithm for a Nonlocal Diffusion Model Applied to a 3D Input Domain*, 24th International Conference on System Theory, Control and Computing (ICSTCC), IEEE, 2020.

## 4. Proiecte de cercetare-dezvoltare

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### Proiecte câștigate prin competiție internațională

- F1. TruBlo-FiDisD** — „Fighting Disinformation Using Decentralised Actors Featuring AI and Blockchain Technologies”,  
Horizon 2020 — Research and Innovation Programme, apel TruBlo — Trusted and reliable content on future blockchains, Grant nr. 957228.  
[https://www.ngi.eu/funded\\_solution/ngi-trubloproject-33/](https://www.ngi.eu/funded_solution/ngi-trubloproject-33/)  
Perioada: 2022–2023.  
Rol: membru în echipa de cercetare/dezvoltare.
- F2. SPARK-IT** — „Igniting Innovation with Trust, Collaboration and Expert Mentorship”,  
Horizon 2020 — Research and Innovation Programme, apel NGI TRUSTCHAIN, nr. contract 101093274.  
Perioada: 2024–2025.  
Rol: membru în echipa de cercetare/dezvoltare.

### Proiecte câștigate prin competiție națională

- G1.** „Mediu colaborativ pentru dezvoltarea arhitecturilor cloud bazate pe OpenStack cu aplicații în CDI”, SMIS 124998, nr. 395/390071/19.10.2021.  
Perioada: 2021–2023.  
Rol: membru în echipa de cercetare/dezvoltare.

Data: 27.02.2026

Pavăl Silviu-Dumitru