

Ioan-Liviu IGNAT (Matematică)

1. Andreu-Vaillo, Fuensanta; Mazón, José M.; Rossi, Julio D.; Toledo-Melero, J. Julián, Nonlocal diffusion problems. Mathematical Surveys and Monographs, 165. American Mathematical Society, Providence, RI; Real Sociedad Matemática Española, Madrid, 2010. xvi+256 pp. ISBN: 978-0-8218- 5230-9
2. Brezis, Haim, Functional analysis, Sobolev spaces and partial differential equations. Universitext. Springer, New York, 2011. xiv+599 pp. ISBN: 978-0-387-70913-0
3. Evans, Lawrence C. Partial differential equations. Second edition. Graduate Studies in Mathematics, 19. American Mathematical Society, Providence, RI, 2010. xxii+749 pp. ISBN: 978-0-8218-4974-3

Oana-Valeria Stamate (Matematică)

1. Baiocchi, C., & Capelo, A. (1984), Variational and Quasivariational Inequalities: Applications to Free Boundary Problems, New York: John Wiley & Sons.
2. Barbu, V. (2010), Nonlinear Differential Equations of Monotone Types in Banach Spaces, Springer.
3. Brézis, H. (1968), Équations et inéquations non linéaires dans les espaces vectoriels en dualité, Annales de l'Institut Fourier, 18(1), 115--175.
4. Kubo, M. (2013), Quasi-Subdifferential Operators and Evolution Equations, Discrete and Continuous Dynamical Systems, Supplement 2013, 447—456.
5. Murase, Y., Kano, R. & Kenmochi, N. (2009), Elliptic quasi-variational inequalities and applications, Discrete and Continuous Dynamical Systems, Supplement, 583--591.
6. Ekeland, I., & Temam, R. (1976), Convex Analysis and Variational Problems, North-Holland Publishing Company, Amsterdam.
7. Kubo M. & Murase, Y. (2016), Quasi-subdifferential operator approach to elliptic variational and quasi-variational inequalities, Math. Meth. Appl. Sci. 39(18), 5626--5635.
8. Pardoux, E. & Răşcanu, A. (2014), Stochastic differential equations, Backward SDEs, Partial differential equations, Stochastic Modelling and Applied Probability, Vol. 69, XVII, Springer.

Sergiu Moroianu (Matematică)

1. M. Zworski, Semiclassical Analysis, AMS (2012)
2. N. Berline, E. Getzler, M. Vergne, Heat kernels and Dirac operators, Springer, ed. 2, (2004)

Tematica:

Operatori pseudodiferentiali, operatori semiclasici, elipticitate, asimptotica valorilor proprii.

Alex Popa (Matematică)

Tematică:

Number Theory

1. Algebraic number theory
2. Modular forms
3. Local Class Field Theory
4. Rigid Geometry

Bibliografie:

1. Frohlich, M.J. Taylor; Algebraic Number theory
2. N. Koblitz; Introduction to Elliptic Curves and Modular Forms
3. J.P. Serre-; Local fields
4. J.S. Milne; Class Field Theory, v4.03 (2020) Available at www.jmilne.org/math/, pages 287 + viii
5. Vladimir G. Berkovich; Spectral theory and analytic geometry over nonarchimedean fields

Eduard Rotenstein (Matematică)

1. Baiocchi, C., & Capelo, A. (1984), Variational and Quasivariational Inequalities: Applications to Free Boundary Problems, New York: John Wiley & Sons.
2. Barbu, V. (2010), Nonlinear Differential Equations of Monotone Types in Banach Spaces, Springer.
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Smaranda Belciug (Informatică)

Tematică

Fundamente de inteligență artificială aplicată în sănătate

- Caracteristicile specifice datelor medicale: eterogenitate, complexitate, bias.
- Modele predictive vs. modele decizionale în suport clinic.
- Probleme etice și de responsabilitate în decizia asistată de AI.

Surse de date medicale

- Date: imagistică, genom, laborator, senzori, dosar electronic.
- Probleme de calitate și integrare a datelor.
- Pre-procesare și armonizare a datelor eterogene.

Metode de machine learning pentru decizie clinică

- Modele de învățare supravegheată: regresie, clasificare, rețele neuronale.
- Modele complexe: random forests, boosting, deep learning.
- Probleme de overfitting, generalizare și validare clinică.

Integrarea AI în suportul decizional clinic

- Modele hibride: deep learning + statistical learning
- Sisteme de suport decizional asistat de cunoștințe medicale.
- Validare în practica medicală: studii clinice, impact asupra fluxului decizional.

Bibliografie

1. Belciug, S. (2025) The hospital manager's guide to artificial intelligence. Concepts, Methods and Techniques, Springer, <https://doi.org/10.1007/978-3-031-80314-7>
2. Satchidananda Dehuri, Monalisa Jena, Sarat Chandra Nayak, Margarita N. Favorskaya, Smaranda Belciug, Advances in Quantum Inspired Artificial Intelligence

3. Techniques and Applications, <https://doi.org/10.1007/978-3-031-89905-8>, 2025
4. Smaranda Belciug, Dominic Iliescu, Pregnancy with Artificial Intelligence. A 9,5 months journey from preconception to birth, Springer Nature, 2023, <https://doi.org/10.1007/978-3-031-18154-2>, 978-3-031-18153-5
5. Smaranda Belciug, Artificial Intelligence in Cancer - Diagnostic to tailored treatment, Elsevier, Academic Press, 2020, <https://www.elsevier.com/books/artificial-intelligence-in-cancer/belciug/978-0-12-820201-2>, ISBN: 9780128202012
6. Smaranda Belciug, Florin Gorunescu, Intelligent Decision Support Systems—A Journey to Smarter Healthcare, <https://doi.org/10.1007/978-3-030-14354-1>, Springer Nature Switzerland AG 2020
7. Florin Gorunescu, Data mining: Concepts, Models, and Techniques, Springer, 2011, <https://link.springer.com/book/10.1007/978-3-642-19721-5>

Marius Leordeanu (Informatică)

1. Duda, Richard O., Peter E. Hart, and David G. Stork. *Pattern classification*. John Wiley & Sons, 2012. Ch 1, 2, 3, 4, 5, 6, 8, 10, Appendix
2. Szeliski, Richard. *Computer vision: algorithms and applications*. Springer Science & Business Media, 2010. Ch 1, 3, 4, 5, 6, 7, 8, 14
3. Wasserman, Larry. *All of statistics: a concise course in statistical inference*. Springer Science & Business Media, 2013. Ch 1, 2, 3, 4, 5, 9, 11, 13, 17, 18, 19, 20
4. Strang, Gilbert, et al. **Introduction to linear algebra**. Vol. 3. Wellesley, MA: Wellesley-Cambridge Press, 1993.

Ferucio-Laurențiu Țiplea (Informatică)

1. Criptografie bazată pe reziduositate
2. Aplicații criptografice multi-liniare
3. Criptografie post-cuantică
4. Modele de securitate și privacy

PhD admission topics for 2025 session

1. Residuosity-based cryptography
2. Cryptographic multi-linear maps
3. Post-Quantum cryptography
4. Security and privacy models

Bibliografie/References

1. J. Katz, Y. Lindell: Introduction to Modern Cryptography, Chapman & Hall/CRC, 3rd edition, 2020
2. D. Boneh, V. Shoup: A Graduate Course in Applied Cryptography, version 0.6, 2023, online at <https://toc.cryptobook.us/>

Cristian Sminchişescu (Calculatoare şi Tehnologia Informaţiei)

1. [Instant 3d human avatar generation using image diffusion models](#) N Kolotouros, T Alldieck, E Corona, EG Bazavan, C Sminchisescu European Conference on Computer Vision, 177-195
2. [Dreamhuman: Animatable 3d avatars from text](#) N Kolotouros, T Alldieck, A Zanzfir, E Bazavan, M Fieraru, C Sminchisescu Advances in Neural Information Processing Systems 36, 10516-10529
3. [Reconstructing three-dimensional models of interacting humans](#) M Fieraru, M Zanzfir, E Oneata, AI Popa, V Olaru, C Sminchisescu arXiv preprint arXiv:2308.01854
4. [Remips: Physically consistent 3d reconstruction of multiple interacting people under weak supervision](#) M Fieraru, M Zanzfir, T Szente, E Bazavan, V Olaru, C Sminchisescu Advances in Neural Information Processing Systems 34, 19385-19397