Curriculum Vitae

Prof. Dr. Radu MICULESCU

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Studies

2014 **Habilitation in Mathematics** with the thesis "*Contributions to the theory of iterated function systems*", defended on June 7, 2014, at Babeş-Bolyai University

1999 **PhD in Mathematics** with the thesis "*Some contributions to the study of certain issues regarding Lipschitz analysis*", defended on February 3, 1999, at University of Bucharest

1992 **Diploma in Matematics**, Faculty of Mathematics, University of Bucharest

Career

2018 – present **Professor**, Faculty of Mathematics and Computer Science, Transilvania University of Braşov, Department of Mathematics and Computer Science

2006 – 2018 **Associate Professor**, Faculty of Mathematics and Computer Science, University of Bucharest , Chair of Mathematical Analysis/ Department of Mathematics

2002 – 2006 **Lecturer,** Faculty of Mathematics and Computer Science, University of Bucharest, Chair of Mathematical Analysis

1996 – 2002 *Asisstant Professor*, Faculty of Mathematics, University of Bucharest, Chair of Mathematical Analysis

1992 – 1996 *Junior Assistant Professor*, Faculty of Mathematics, University of Bucharest, Chair of Mathematical Analysis

Research interests

Hutchinson-Barnsley fractals

Lipschitz functions

Mentoring

Postdocs

2023 **R. Pasupathi**, Transilvania University of Braşov

PhD Students

2015 – 2019 **Flavian Georgescu**, with the thesis "*Iterated function systems comprising phi-max contractions",* defended on June 28, 2019, at University of Piteşti

Research

Papers (selection)   h-index 13

" *Contractive multivariate zipper fractal interpolation functions",* **Results in Mathematics,** accepted for publication, (2024), (with R. Pasupathi).

"Relational generalizaed iterated function systems", **Chaos, Solitons and Fractals,** 182 (2024), 114823 (with Izabella Abraham and Alexandru Mihail).

"A very general framework for fractal interpolation functions", **Journal of Mathematical Analysis and Applications,** 534 (2024), 128093 (with R. Pasupathi).

"On the localization of Hutchinson-Barnsley fractals", **Chaos, Solitons and Fractals,** 173 (2023), 113674 (with Bogdan Anghelina).

"*Invariant (fractal) vector measures as fixed points of markov-type operators*", **Bulletin of the Brazilian Mathematical Society, New Series**, 54 (2023), 8 (with Ion Chitescu, Loredana Ioana, Lucian Nita and Razvan-Cornel Sfetcu).

"*Interpolation type iterated function systems*", **Journal of Mathematical Analysis and Applications**, 519 (2023), 126747 (with Alexandru Mihail and Cristina Maria Pacurar).

"The structure of fuzzy fractals generated by an orbital fuzzy iterated function system", **Demonstratio Mathematica,** 56 (2023), 20220217 (with Alexandru Mihail and Irina Savu).

"A fractal interpolation scheme for a possible sizeable set of data", **Journal of Fractal Geometry,** 9 (2022), 337-355 (with Alexandru Mihail and Cristina Maria Pacurar).

"Graph Lipscomb's space is a generalized Hutchinson-Barnsley fractal", **Aequationes Mathematicae,** 96 (2022), 1141-1157 (with Alexandru Mihail).

"A characterization of fuzzy fractals generated by an orbital fuzzy iterated function system", **Carpathian Journal of Mathematics,** 38 (2022), 583-595 (with Alexandru Mihail and Irina Savu).

"An application of Edelstein's contraction principle: the attractor of a graph-directed generalized iterated function system", **Journal of Fixed Point Theory and Applications**, (2022) 24:63 (with Alexandru Mihail and Silviu Urziceanu).

"On the complex and chaotic dynamics of standard logistic sine square map", **Analele Stiintifice ale Universitatii "Ovidius" Constanta,** 29 (2021), 201-227 (with Sudesh Kumari and Renu Chugh).

"Diameter diminishing to zero IFSs", **Monatshefte fur Mathematik,** 196 (2021), 861-876 (with Alexandru Mihail).

"Another characterization of hyperbolic diameter diminishing to zero IFSs", **Carpathian Journal of Mathematics,** 37 (2021), 217-226 (with Alexandru Mihail and Cristina Maria Pacurar).

"Contractive affine generalized iterated function systems which are topologically contracting", **Chaos, Solitons and Fractals**, 114 (2020), 110404 (with Alexandru Mihail and Silviu Urziceanu).

"A new algorithm that generates the image of the attractor of a generalized iterated function system", **Numerical Algorithms**, 83 (2020), 1399-1413 (with Alexandru Mihail and Silviu Urziceanu).

"Hardy-Rogers type iterated function systems", **Qualitative Theory of Dynamical Systems**, 19, 37 (2020) (with Flavian Georgescu and Alexandru Mihail).

"*A Nadler type result for iterated multifunction systems*", **Journal of Fixed Point Theory and Applications**, (2019), 21:79 (with Alexandru Mihail).

"*Invariant measures of Markov operators associated to iterated function systems consisting of phi-max-contractions with probabilities*", **Indagationes Mathematicae**, 30 (2019), 214-226 (with Flavian Georgescu and Alexandru Mihail).

"*A generalization for a finite family of functions of the converse of Browder's fixed point theorem*", **Bulletin of the Brazilian Mathematical Society, New Series**, 49 (2018), 673-698 (with Alexandru Mihail).

"*Operators on spaces of functions and measures. Vector invariant (fractal) measures*", **Results in Mathematics**, (2018), 73:139 (with Ion Chitescu, Loredana Ioana and Lucian Nita).

"The canonical projection associated with certain possibly infinite generalized iterated function systems as a fixed point", **Journal of Fixed Point Theory and Applications**, (2018) 20:141 (with Silviu Urziceanu).

"*A study of the attractor of a phi-max-IFS via a relatively new method*", **Journal of Fixed Point Theory and Applications**, (2018) 20:24 (with Flavian Georgescu and Alexandru Mihail).

"*Caristi-Kirk type and Boyd&Wong-Browder-Matkowski-Rus type fixed point results in b-metric spaces*", **Filomat**, 31 (2017), 4331-4340 (with Alexandru Mihail).

"*New fixed point theorems for set-valued contractions in b-metric spaces*", **Journal of Fixed Point Theory and Applications**, 19 (2017), 2153-2163 (with Alexandru Mihail).

"*A generalization of Istratescu's fixed point theorem for convex contractions*", **Fixed Point Theory**, 18 (2017), 689-702 (with Alexandru Mihail).

"*Monge-Kantorovich norms on spaces of vector measures*", **Results in Mathematics**, 70 (2016), 349-371 (with Ion Chitescu, Loredana Ioana and Lucian Nita).

"*Reich-type iterated function systems*", **Journal of Fixed Point Theory and Applications**, 18 (2016), 285-296 (with Alexandru Mihail).

"*Remetrization results for possible infinite self-similar systems*", **Topological Methods in Nonlinear Analysis**, 47 (2016), 335-345 (with Alexandru Mihail).

"*A sufficient condition for a finite family of continuous functions to be transformed into ψ-contractions*", **Annales Academiae Scientiarum Fennicae, Mathematica**, 41 (2016), 51-65 (with Alexandru Mihail).

"*Sesquilinear uniform vector integral*", **Proceedings - Mathematical Sciences**, 125 (2015), 187-198 (with Ion Chitescu, Loredana Ioana and Lucian Nita).

"*On a question of A. Kameyama concerning self-similar metric*", **Journal of Mathematical Analysis and Applications**, 422 (2015), 265-271 (with Alexandru Mihail).

"*Type A sets and the attractors of infinite iterated function systems*", **Results in Mathematics**, 66 (2014), 511-524 (with Ion Chitescu and Loredana Ioana).

"*Generalized iterated function systems with place dependent probabilities*", **Acta Applicandae Mathematicae**, 130 (2014), 135-150.

"*Alternative characterization of hyperbolic affine infinite iterated function systems*", **Journal of Mathematical Analysis and Applications**, 407 (2013), 56-68 (with Alexandru Mihail).

"*A characterization of compact operators via the non-connectedness of the attractors of a family of IFSs*", **Complex Analysis and Operator Theory**, 7 (2013), 1819-1830 (with Alexandru Mihail).

"*The independence of p of the Lipscomb's L(A) space fractalized in l^p(A)*", **Topology and its Applications**, 160 (2013), 241-250 (with Alexandru Mihail).

"*Some connections between the attractors of an IIFS S and the attractors of the sub-IFSs of S*", **Fixed Point Theory and Applications,** volume 2012, 2012:141, 11 pages, doi: 10.1186/1687-1812-2012-141 (with Loredana Ioana).

"*Lipscomb's L(A) space fractalized in l^p(A)*", **Mediterranean Journal of Mathematics**, 9 (2012), 515-524 (with Alexandru Mihail)..

"*On a family of IFSs whose attractors are not connected*", **Journal of Mathematical Analysis and Applications**, 376 (2011), 187-192 (with Alexandru Mihail).

"*Approximation of infinite dimensional fractals generated by integral equations*", **Journal of Computational and Applied Mathematics**, 234 (2010), 1417-1425 (with Ion Chitescu and Horia Georgescu).

"*Generalized IFSs on noncompact spaces*", **Fixed Point Theory and Applications,** Volume 2010, Article ID 584215, 15 pages, doi:10.1155/2010/584215 (with Alexandru Mihail).

"*A generalization of the Hutchinson measure*", **Mediterranean Journal of Mathematics**, 6 (2009), 203-213 (with Alexandru Mihail).

"*The shift space for an infinite iterated function systems*", **Mathematical Reports ,** 61 (2009), 21-32 (with Alexandru Mihail).

"*Applications of fixed point theorems in the theory of generalized IFS*", **Fixed Point Theory and Applications**, Volume 2008, Article ID 312876, 11 pages, doi: 10.1155/312876 (with Alexandru Mihail).

"*Lipscomb's space ω^A is the attractor of an infinite IFS containing affine transformations on $l^2(A)$*", **Proceedings of the American Mathematical Society**, 136 (2008), 587-592 (with Alexandru Mihail).

"*Some observations on generalized Lipschitz functions*", **Rocky Mountain Journal of Mathematics**, 37 (2007), 893-903.

"*Approximations by Lipschitz functions generated by extensions*", **Real Analysis Exchange**, 28 (2002/2003), 33-40.

"*Approximation of continuous functions by LIP functions*", **Real Analysis Exchange**, 26 (2000/2001), 449-452.

"*Les Fonction Lipschitziennes Homotopiques Sont Lipschitz Homotopiques*", **Revue Roumaine des Mathematiques Pures et Appliquees**, 45 (2000), 119-122.

"*Approximating Uniformly Continuous Bounded Functions by Lipschitz Functions*", **Revue Roumaine des Mathematiques Pures et Appliquees**, 44 (1999), 253-255.

"*Extensions of some locally Lipschitz maps*", **Bulletin Mathematique de la Societe des Sciences Mathematiques de Roumanie**, 89 (1998), 197-203.

Books (selection)

"*Lipschitz Functions*", **Springer**, Lectures Notes in Mathematics, vol. 2241, 2019, ISBN 978-3-030-16489-8, 591 pages (with Stefan Cobzas and Adriana Nicolae).

"*Functii Lipschitz*", **Editura Academiei Romane**, Bucuresti, 2004, ISBN 973-27-1061-6, 214 pages (with Cristinel Mortici).

"*Analiza Matematica (note de curs)*", **Editura Universitatii din Bucuresti**, 2010, ISBN 978-973-737-867-5, 518 pages. **Editura Pro Universitaria**, Bucuresti 2017, ISBN: 978-606-26-0807-1, 410 pages.

Conference presentations (selection)

"On the localization of Hutchinson-Barnsley fractals", Seminar Rubio de Francia, University of Zaragoza, April 10, 2024, Zaragoza, Spain

"Graph Lipscomb's space is a generalized Hutchinson-Barnsley fractal", Mathematics Days in Sofia, Institute of Mathematics and Informatics, Bulgarian Academy of Sciences, July 10-14, 2023, Sofia, Bulgaria

"On the localization of Hutchinson-Barnsley fractals", Seminar Optimization, University of Vienna, May 23, 2023, Vienna, Austria

"The structure of fuzzy fractals generated by an orbital fuzzy iterated function system", Geometry of deterministic and random fractals, Honouring the 60+1st birthday of Professor Karoly Simon, June 27- July 1, 2022, Budapest University of Technology and Economics, Budapesta, Ungaria

"A characterization of fuzzy fractals generated by an orbital fuzzy iterated function system", Inspiration in Real Analysis, 3.04.2022-08.04.2022, Bedlewo Conference Center, Polonia, on-line

"A Nadler type result for iterated multifunction systems", First Analysis Mathematical International Conference, August 12-17, 2019, Budapest, Hungary

"Iterated function systems consisting of continuous functions satisfying Banach's orbital condition", Aplimat 2019, 18th Conference on Applied Mathematics, February 5-7, 2019, Slovak University of Technology in Bratislava, Slovacia

"A new algorithm that generates the image of the attractor of a GIFS", International Conference on Numerical Analysis and Approximation Theory, September 6-9, 2018, Babes-Bolyai University, Cluj-Napoca, Romania

"Invariant measures of Markov operators associated to iterated function systems consisting of phi-max-contractions with probabilities", The 23rd International Conference on Difference Equations and Applications, July 24 - 28, 2017, Timisoara, Romania

"A generalization of Istratescu's fixed point theorem for convex contractions", International Conference on Nonlinear Operators, Differential Equations and Applications, July 14-17, 2015, Cluj-Napoca, Romania

"On a question of A. Kameyama", The 10th AIMS Conference on Dynamical System Differential Equations and Applications, July 7-11, 2014, Madrid, Spain

"Some applications of fixed point theorems in the theory of generalized iterated function systems", Summer Symposion in Real Analysis XXXV, June 5-11, 2011, Alfred Renyi Mathematical Institute, Budapest, Hungary

"Some results concerning the generalized IFSs", Alexandru Myller Mathematical Seminar Centennial Conference, June 24, 2010, Iasi, Romania

"Approximating (Uniformly Bounded) Continuous Functions with (locally) Lipschitz Functions", American Association of Mathematics, Texas Section Meeting, March 29-31, 2001, University of Houston-Clear Lake, Houston, Texas, USA

Scientific and administrative responsabilities

Current editorial work

2016 – present	*Fixed Point Theory*
2006 – present	*Creative Mathematics and Informatics*
2019 – present	*Bulletin of the Transilvania University of Braşov, Series III: Mathematics and Computer Science*

Past editorial work

2008 – 2009	*Analele Universităţii Bucureşti; Seria Matematică*
2005 – 2007	*Gazeta Matematică, series A and B*
2005 – 2018	Associated editor for *Zentralblatt Math, Romanian Unit*

Miscellaneous

Awards

"Spiru Haret" prize of the Romanian Academy, 2004

Member in Ph. D. thesis committes

Universitatea din Bucuresti

- Traian Gîdea, Contribuţii la teoria ecuatiilor funcţionale, 2009
- Răzvan Sava, Contribuţii la teoria KB spaţiilor, 2011
- Liliana Siretchi, Spaţii Kothe de câmpuri de vectori, 2012
- Dan Dumitru, Proprietăţi topologice ale atractorilor sistemelor iterative de funcţii, 2014

Universitatea Babeş-Bolyai

- Adrian Magdaş, Contribuţii la teoria punctului fix pentru operatori ciclici şi aplicaţii, 2020

Universitatea Naţională de Ştiinţa şi Tehnologie Politehnica Bucureşti

- Doru Mihai Dumitrescu, Operatori cu punct fix in spaţii metrice generalizate JS, 2024

Universitatea Ovidius Constanţa

- Mădalina Corciovei (Bănescu), Evaluări asimptotice în teoria analitică a numerelor, 2014

Universitatea Tehnică din Cluj Napoca, Centrul Universitar Nord din Baia Mare

- Melania-Iulia Dobrican, Fixed point theorems in metric spaces endowed with a binary relation, 2018
- Monika Zakany, Fixed point theorems for almost loal contractions with applications, 2020

Universitatea din Piteşti

- Lucian-Sorin Niţă, Măsuri vectoriale fractale, 2015
- Anca Plavitu, Generalizations in the Theory of Measure and Integral, 2016
- Loredana-Madalina Ioana, Generalizari ale sistemelor iterative de functii, 2016
- Oana Magdalena Cojocaru (Costandache), Spatii normate de functii masurabile vectoriale, 2016
- Irina Mădălina Manea (Giurgescu), The Choquet and Sugeno integrals. Theory and applications, 2023

National Institute of Technology Calicut, India

- Rinju Balu, Fractals in product spaces and study on similarity boundary of self similar sets, 2016

Referee for mathematical journals

Acta Applicadae Mathematicae, Afrika Matematika, AIMS Mathematics, Applied Mathematical Modelling, Analele Stiinţifice ale Universităţii Alexandru Ioan Cuza din Iaşi, Matematică, Analele Stiinţifice ale Universităţii Ovidius Constanţa, Seria Matematică, Analele Universităţii Bucureşti, Seria Matematică, Annales Mathematicae Silesianae, Annali dell'Universita' di Ferrara, Arab Journal of Mathematical Sciences, Axiom, Bulletin Mathematique de la Societe des Sciences Mathematiques de Roumanie, Bulletin of the Transilvania University of Brasov, Series III – Mathematics. Informatics. Physics, Carpathian Journal of Mathematics, Chaos, Solitons & Fractals, Communications in Nonlinear Science and Numerical Simulation, Complex Variables and Eliptic Equations, Computational and Mathematical Methods, Demonstration Mathematica, Filomat, Fixed Point Theory, Fixed Point Theory and its Applications, Fractal and Fractional, Fuzzy Sets and Systems, International Journal of Mathematics and Mathematical Sciences, Journal of

Applied Analysis, Journal of Dynamics and Differential Equation, Journal of Fixed Point Theory and Application, Journal of Fractal Geometry, Journal of Function Spaces, Journal of King Saud University – Science, Journal of Nonlinear and Convex Analysis, Journal of Mathematical Analysis and Applications, Kuwait Journal of Science, Matematicki Vesnik, Mathematics, Mathematical Reports, Mediterranean Journal of Mathematics, Miskolc Mathematical Notes, Monatshefte für Mathematik, Numerical Algorithms, Open Mathematics, Periodica Mathematica Hungarica, Portugaliae Mathematica, Punjab University Journal of Mathematics, Real Analysis Exchange, Rendiconti del Circolo Matematico di Palermo, Results in Mathematics, Revista de la Real Academia de Ciencias Exactas, Fisicas y Naturales. Seria A. Matematicas, Qualitative Theory of Dynamical Systems, The Journal of Geometric Analysis, Tatra Mountains Mathematical Publications, Topological Methods in Nonlinear Analysis, Topology and its Applications, Scientific Bulletin. Series A. Applied Mathematics and Physics. Politehnica University of Bucharest, Studia Universitatis Babes-Bolyai Mathematica, Symmetry, Vietnam Journal of Mathematics

Teaching experience

- ***Mathematical Analysis, Complex Analysis, Functional Analysis, Lipschitz Analysis***

at *Faculty of Mathematics and Informatics, University of Bucharest*

- ***Mathematical Analysis, Functional Analysis, Fractal Theory***

at *Faculty of Mathematics and Informatics, Transilvania University of Braşov*

April 2024