Dr. Neculai Andrei

LIST
of scientific publications, R&D projects and patents

1. Articles published in international journals, ISI indexed

No.	Author / Title of article / Journal / Impact factor (IF)
1.	**N. Andrei,** *An acceleration of gradient descent algorithm with backtracking for Unconstrained Optimization.* **Numerical Algorithms, volume 42, number 1, May 2006, p. 63-73** **IF = 1.042**
2.	**N. Andrei,** *Scaled conjugate gradient algorithms for Unconstrained Optimization.* **Computational Optimization and Applications, vol.38, no. 3, December 2007, p. 401-416** **IF = 1.350**
3.	**N. Andrei,** *A Scaled BFGS preconditioned conjugate gradient algorithm for Unconstrained Optimization.* **Applied Mathematics Letters (AML), 20 (2007), p. 645-650** **IF = 1.371**
4.	**N. Andrei,** *Scaled memoryless BFGS preconditioned conjugate gradient algorithm for Unconstrained Optimization.* **Optimization Methods and Software (OMS), Volume 22, Number 4, August 2007, p. 561-571**. **IF = 0.866**
5.	**N. Andrei,** *A scaled nonlinear conjugate gradient algorithm for unconstrained optimization.* **Optimization**, **A Journal of Mathematical Programming and Operations Research, Vol. 57, No. 4, August 2008, p. 549-570** **IF = 0.845**
6.	**N. Andrei,** *Another hybrid conjugate gradient algorithm for unconstrained optimization.* **Numerical Algorithms, 47 (2008), p. 143-156** **IF = 1.042**
7.	**N. Andrei,** *A Dai-Yuan conjugate gradient algorithm with sufficient descent and conjugacy condition for unconstrained optimization* **Applied Mathematics Letters (AML),Volume 21, Issue 2, February 2008, p. 165-171** **IF = 1.371**
8.	**N. Andrei,** *Hybrid conjugate gradient algorithm for unconstrained optimization.* **Journal of Optimization Theory and Applications (JOTA)**. **Vol. 141, No. 2, May 2009, p. 249-264**

	IF = 1.062
9.	**N. Andrei**, *Another nonlinear conjugate gradient algorithm for unconstrained optimization.* **Optimization Methods and Software (OMS)**. **vol. 24, no. 1, February 2009, p. 89-104** **IF = 0.866**
10.	**N. Andrei**, *Acceleration of conjugate gradient algorithms for unconstrained optimization.* **Applied Mathematics and Computation**. **Volume 213, Issue 2, 15 July 2009, p. 361-369.** **IF = 1.317**
11.	**N. Andrei**, *Accelerated conjugate gradient algorithm with finite difference Hessian/vector product approximation for unconstrained optimization.* **Journal of Computational and Applied Mathematics**, **230 (2009), p. 570-582** **IF = 1.112**
12.	**N. Andrei,** *Accelerated hybrid conjugate gradient algorithm with modified secant condition for unconstrained optimization.* **Numerical Algorithms, 54 (2010), p. 23-46** **IF = 1.042**
13.	**N. Andrei,** *Accelerated scaled memoryless BFGS preconditioned conjugate gradient algorithm for unconstrained optimization.* **European Journal of Operational Research**. **204 (2010), p. 410-420** **IF = 1.815**
14.	**N. Andrei,** *A modified Polak-Ribiere-Polyak conjugate gradient algorithm for unconstrained optimization.* **Optimization**. **A Journal of Mathematical Programming and Operations Research, Vol. 60, Issue 12 (2011), p. 1457-1471** **IF = 0.845**
15.	**N. Andrei,** *New accelerated conjugate gradient algorithms as a modification of Dai-Yuan's computational scheme for unconstrained optimization.* **Journal of Computational and Applied Mathematics, 234 (2010), p. 3397-3410** **IF = 1.112**
16.	**N. Andrei,** *Open problems in conjugate gradient algorithms for unconstrained optimization.* **Bulletin of the Malaysian Mathematical Sciences Society**, **(2) 34 (2) (2011) p. 319-330** **IF = 0.711**
17.	**N. Andrei,** *An accelerated conjugate gradient algorithm with guaranteed descent and conjugacy conditions for unconstrained optimization.* **Optimization Methods and Software, vol.27, nos. 4-5, 2012, p. 583-604** **IF = 0.866**
18.	**N. Andrei** *A simple three-term conjugate gradient algorithm for unconstrained optimization.* **Journal of Computational and Applied Mathematics, vol. 241, 2013, p. 19-29** **IF =1.112**
19.	**N. Andrei** *On three-term conjugate gradient algorithms for unconstrainec optimization.* **Applied Mathematics and Computation, vol. 219, 2013, p. 6316-6327** **IF = 1.317**

20.	**N. Andrei** *Another conjugate gradient algorithm with guaranteed descent and conjugacy conditions for large-scale unconstrained optimization* **Journal of Optimization Theory and Applications, vol. 2013, vol. 159, p. 159-282** **IF = 1.062**
21.	**N. Andrei** *An accelerated subspace minimization three-term conjugate gradient algorithm for unconstrained optimization* **Numerical Algorithms, vol. 65, issue 4, 2014, p. 859-874** **IF = 1.042**
22.	**N. Andrei** *A new three-term conjugate gradient algorithm for unconstrained optimization* **Numerical Algorithms, vol. 68, issue 2, 2015, p. 305-321** **IF = 1.042**
23.	**N. Andrei** *An adaptive conjugate gradient algorithm for large-scale unconstrained optimization* **Journal of Computational and Applied Mathematics, vol. 292, 2016, p. 83-91** **IF = 1.112**
24.	**N. Andrei** *Eigenvalues versus singular values study in conjugate gradient algorithms for large-scale unconstrained optimization.* **Optimization Methods and Software, 2016, p. 1-18, DOI: 10.1080/10556788.2016.1225211** **IF = 1.49**

2. Articles published in national journals, ISI indexed

Nr.	Author / Title of article / Journal
1.	**N. Andrei,** *An Interior Point Algorithm for Nonlinear Programming.* **Studies in Informatics and Control, vol.7, no.4, December 1998, p. 365-395**
2.	**N. Andrei,** *Predictor-Corrector Interior-Point Methods for Linear Constrained Optimization.* **Studies in Informatics and Control, vol.7, no.2, June 1998, p. 155-177**
3.	**N. Andrei,** *Penalty-Barrier algorithms for nonlinear optimization. Preliminary computational results.* **Studies in Informatics and Control, vol. 7, no.1, March 1998, p. 15-36**
4.	**N. Andrei,** *On the complexity of MINOS package for linear programming.* **Studies in Informatics and Control, vol.13, no.1, March 2004, p. 35-46**
5.	**N. Andrei,** *Modern Control Theory - A historical perspective.* **Studies in Informatics and Control, vol.10, no.1, March 2006, p. 51-62**
6.	**N. Andrei,** *Performance of Conjugate Gradient Algorithms on some MINPACK-2 Unconstrained Optimization Applications.* **Studies in Informatics and Control, vol.15, no.2, June 2006, p. 145-168**
7.	**N. Andrei,**

	Numerical comparison of conjugate gradient algorithms for unconstrained optimization. **Studies in Informatics and Control, vol.16, no.4, December 2007, p. 333-352**
8.	**N. Andrei,** *A hybrid conjugate gradient algorithm for unconstrained optimization as a convex combination of Hestenes-Stiefel and Dai-Yuan.* **Studies in Informatics and Control, vol.17, no.1, March 2008, p. 55-70**
9.	**N. Andrei,** *On quadratic internal model principle in mathematical programming.* **Studies in Informatics and Control, vol. 18, No. 4, December 2009, p. 337-348**
10.	**N. Andrei,** *Accelerated conjugate gradient algorithm with modified secant condition for unconstrained optimization.* **Studies in Informatics and Control, vol. 18, No. 3, September 2009, p. 211-232**
11.	**N. Andrei,** *A numerical study on efficiency and robustness of some conjugate gradient algorithms for large-scale unconstrained optimization.* **Studies in Informatics and Control, Vol. 22, No. 4, December 2013, p. 259-284**

3. Articles published in journals, indexed in other data bases

Nr.	Author / Title of article / Journal
1.	**N. Andrei,** *The quadrupled rational interpretation of Divinity.* **Annals of Academy of Romanian Scientists**, Series on Science and Technology of Information, vol. 5, nr. 1, 2012, p. 7-14
2.	**N. Andrei,** *Determinarea coordonatelor ţintelor aeriene utilizând noduri de detecţie.* Revista Română de Informatică şi Automatică, vol. 19, nr.2, 2009, p. 51-60
3.	**N. Andrei,** *Probleme deschise în algoritmii de gradient conjugat pentru optimizare fără restricţii. Centenar Eduard Stiefel (1909-1978).* Revista Română de Informatică şi Automatică**,** vol. 19, no. 1, 2009, p. 5-14
4.	**N. Andrei**, *New hybrid conjugate gradient algorithms for unconstrained optimization.* **Encyclopedia of Optimization**, Second Edition, 2009, C.A. Floudas and P. Pardalos (Eds.). Vol. N. p. 2560-2571
5.	**N. Andrei**, *Performance profiles of conjugate gradient algorithms for unconstrained optimization.* **Encyclopedia of Optimization,** Second Edition, 2009, C.A. Floudas and P. Pardalos (Eds.). Vol. P. p. 2938-2953
6.	**N. Andrei,** *Eduard Stiefel's birthday centenary.* EUROPT - Newsletter 14, March 2009, p. 21-22
7.	**N. Andrei,** *Quadratic internal model principle in mathematical programming.* EUROPT - Newsletter 16, August 2009, p. 13-17
8.	**N. Andrei,** *Teorema Noether şi fundamentele modelării matematice.* Revista Română de Informatică şi Automatică**,** vol. 18, no. 4, 2008, p. 11-22
9.	**N. Andrei,**

	Another conjugate gradient algorithm for unconstrained optimization. **Annals of Academy of Romanian Scientists**, Series on Science and Technology of Information, vol. 1, no. 1, 2008, p. 7-20
10.	**N. Andrei,** *An Unconstrained Optimization Test Functions Collection.* Advanced Modeling and Optimization. An Electronic International Journal, Volume 10, Number 1, 2008, p. 147-161
11.	**N. Andrei** *Metamorfozele ştiinţei.* Revista Română de Informatică şi Automatică, vol. 17, nr. 3, 2007, p. 25-34
12.	**N. Andrei** *Optimizarea funcţionării unui sistem de lacuri.* Revista Română de Informatică şi Automatică, vol. 17, no. 1, 2007, p. 5-10
13.	**N. Andrei** *Convex functions.* Advanced Modeling and Optimization. An Electronic International Journal, Volume 9, Number 2, 2007, p. 257-267
14.	**N. Andrei** *Modele de optimizare versus modele de simulare şi econometrice.* Revista Română de Informatică şi Automatică, vol. 16, no. 3, 2006, p. 5-12
15.	**N. Andrei** *Model de creştere economică Ramsey.* Revista Română de Informatică şi Automatică, vol. 16, nr. 2, 2006, pp.15-20.
16.	**N. Andrei** *Optimizarea funcţionării a două rezervoare.* Revista Română de Informatică şi Automatică, vol. 16, no. 1, 2006, p. 15-18
17.	**N. Andrei** Informatica – algebră computaţională (I), AXIOMA, Nr. 59, February 2005, p. 24
18.	**N. Andrei** Informatica – algebră computaţională (II), AXIOMA, Nr. 60, March 2005, p. 38-40
19.	**N. Andrei,** Gh. Borcan *ALLO - Limbaj algebric pentru optimizare liniară.* Revista Română de Informatică şi Automatică, vol. 8, no. 3, 1998, p. 55-67
20.	**N. Andrei,** M. Barbulescu, *Balance constrained reduction of large-scale linear programming problems.* **Annals of Operations Research, vol.43, 1993, p. 149-170**
21.	**N. Andrei,** *Application of sparse matrix techniques in GRG algorithm for very large-scale non-linear programming.* Rev. Roum. Sci. Techn.-Electrotechn. Et Energ., vol.32, no.4, 1987, p. 457-464
22.	**N. Andrei,** *Application of sparse matrix techniques to the GRG algorithm for large-scale non-linear programming.* Rev. Roum. Sci. Techn.-Electrotechn. Et Energ., vol.30, no.2, 1985, p. 175-186
23.	**N. Andrei,** *Dynamic modeling of job-shop production scheduling.* **Computer Models for Production and Inventory Control, Simulation Series, vol.12, no.2.** The Society for Computer Simulation, La Jolla, California, 1984, p. 23-44
24.	**N. Andrei,** *Sparse systems. Digraph exact disturbance rejection.* Rev. Roum. Sci. Techn.-Electrotechn. et Energ., vol.28, no.4, 1983, p. 405-413

25.	**N. Andrei,** *Temporal decomposition algorithms for large-scale linear dynamic programming problems.* Rev. Roum. Sci. Techn.-Electrotechn. et Energ., vol.28, no.1, 1983, p. 71-84
26.	**N. Andrei,** *A new computational solution to hierarchical control of the large-scale linear quadratic tracking problem.* Rev. Roum. Sci. Techn.-Electrotechn. et Energ., vol.27, no.1, 1982, p. 139-152
27.	**N. Andrei,** *Nested decomposition of large-scale multi-stage linear programs.* Rev. Roum. Sci. Techn.-Electrotechn. et Energ., vol.26, no.2, 1981, p. 291-303
28.	**N. Andrei,** *Nested decomposition of large-scale linear dynamic programming problems.* Rev. Roum. Sci. Techn.-Electrotechn. et Energ., vol.26, no.1, 1981, p. 99-113
29.	**N. Andrei,** *A new computational solution to linear quadratic tracking problem.* Rev. Roum. Sci. Techn.-Electrotechn. et Energ., vol.25, no.4, 1980, p. 579-589
30.	**N. Andrei,** *On compensator selection strategies in decentralized systems.* Rev. Roum. Sci. Techn.-Electrotechn. et Energ., vol.24, no.4, 1979, p. 677-688
31.	**N. Andrei,** *Decentralization and hierarchy control of large-scale systems.* Rev. Roum. Sci. Techn.-Electrotechn. et Energ., vol.23, no.4, 1978, p. 595-605
32.	**N. Andrei,** *On decentralized systems.* Rev. Roum. Sci. Techn.-Electrotechn. et Energ., vol.21, no.4, 1976, p. 553-566
33.	**N. Andrei,** *Identification by simulation.* Applications of mathematics in system theory, Proc. Int. Symp., Braşov/Romania 1978, Vol. I, p. 75-79 (1979)
34.	**N. Andrei,** C. Răsturnoiu *Bandwidth of sparse matrices.* Applications of mathematics in system theory, Proc. int. Symp., Braşov/România 1978, Vol. II, p. 267-274 (1979)

4. Books published (international)

Nr.	Author / Book title
1.	**N. Andrei** ***Sparse Systems. Digraph approach of large-scale linear systems theory.*** Verlag TÜV Rheinland GmbH, Cologne, 1985, viii+255 pages ISBN: 3885852373
2.	**N. Andrei** ***Nonlinear Optimization Applications using the GAMS Technology*** Springer Science+Business Media New York. *Springer Optimization and its Applications Series. Vol. 81*, 2013. ISBN: 978-1-4614-6796-0, ISBN: 978-1-4614-6796-7 (eBook), 340 + XXII pages DOI: 10.1007/978-1-4614-6796-7

5. Books published (national)

Nr.	Author / Book title
1.	**N. Andrei,** C. Răsturnoiu *Matrice rare şi aplicaţiile lor* 280 pagini. Editura Tehnică, Bucureşti, 1983
2.	**N. Andrei** *Programarea Matematică Avansată. Teorie, Metode Computaţionale, Aplicaţii* Editura Tehnică - Bucureşti, 1999 High Performance Computing Series, ISBN 973-31-1387-0. XXXI+879 pagini. [**Grigore Moisil** award of the Romanian Academy 2001]
3.	**N. Andrei** *Programarea Matematică. Metode de Punct Interior* Editura Tehnică - Bucureşti, 1999 High Performance Computing Series ISBN:973-31-1392-1, 400 pages
4.	**N. Andrei** *Optimizare fără Restrictii. Metode de Direcţii Conjugate* MATRIXROM - Bucureşti, 2000 ISBN: 973-685-086-2, 158 pages
5.	**N. Andrei** *Metode de Punct Interior în Optimizarea Convexă* MATRIXROM - Bucureşti, 2000 ISBN: 973-685-165-6, 389 pages
6.	**N. Andrei** *Programare Semidefinită* MATRIXROM - Bucureşti, 2001 ISBN: 973-685-241-5, 144 pages
7.	**N. Andrei** *Pachete de Programe, Modele şi Probleme de Test pentru Programarea Matematică* MATRIXROM - Bucureşti, 2001 ISBN: 973-685-372-1, 590 pages
8.	**N. Andrei** *Sisteme şi Pachete de Programe pentru Programarea Matematică* Editura Tehnică - Bucureşti, 2002 High Performance Computing Series ISBN: 973-31-2093-6, 483 pages
9.	**N. Andrei** *Modele, Probleme de Test şi Aplicaţii de Programare Matematică* Editura Tehnică - Bucureşti, 2003 High Performance Computing Series ISBN: 973-31-2094-4, 479 pages [**The best Book in Informatics** award of the Romanian Editors Association, 2003]
10.	**N. Andrei** *Convergenţa Algoritmilor de Optimizare* Editura Tehnică - Bucureşti, 2004 High Performance Computing Series ISBN: 973-31-2195-9, 306 pages
11.	**N. Andrei** *Teorie versus Empirism în Analiza Algoritmilor de Optimizare*

	Editura Tehnică - Bucureşti, 2004 High Performance Computing Series ISBN: 973-31-2233-5, 354 pages
12.	**N. Andrei** *Eseu asupra Fundamentelor Informaticii* Editura YES - Bucureşti, 2006 ISBN: 973-87138-3-8, 83 pages
13.	**N. Andrei** *Critica Raţiunii Algoritmilor de Optimizare fără Restricţii* Editura Academiei Române - Bucureşti, 2009 ISBN: 978-973-27-1669-4, 826 + XXVIII pages [The book contains a CD with optimization programs]
14.	**N. Andrei** *Metode Avansate de Gradient Conjugat pentru Optimizare fără Restricţii* Editura Academiei Oamenilor de Ştiinţă din România - Bucureşti, 2009 ISBN: 978-606-92161-0-1, 323 pages
15.	**N. Andrei** *Critica Raţiunii Algoritmilor de Programare Liniară* Editura Academiei Române - Bucureşti, 2011 ISBN: 978-973-27-2076-9, 908 + XXVII pages [The book contains a CD with optimization programs]
16.	**N. Andrei** *Eseu despre Fundamentele Modelării Matematice* Editura Academiei Române – Bucureşti, 2012 ISBN: 978-973-27-2204-6, 337 + XII pages [**Stefan Odobleja** award of the Romanian Scientists Academy, 2014]
17.	**N. Andrei** *Critica Raţiunii Algoritmilor de Optimizare cu Restricţii* Editura Academiei Române – Bucureşti, 2015 ISBN: 978-973-27-2527-6, 1124 + XXVIII pages [The book contains a CD with optimization programs]

6. Book chapters (international)

Nr.	Author / Chapter and book title
1.	**N. Andrei** *A stage in Bayreuth University.* In: Gisela Janetzke and Armin Heinemann (Eds.) Humboldtianer in Bayreuth, Ein Erinnerungsjournal, Universität Bayreuth, Bayreuth 2015, p. 39
2.	**N. Andrei** *A new adaptive conjugate gradient algorithm for large-scale unconstrained optimization.* In: Boris Goldengorin (Ed.), *Optimization and Applications in Control and Data Sciences*, Springer Optimization and Its Applications Volume 115, Springer International Publishing Switzerland, 2016, p.1-16

7. Book chapters (national)

Nr.	Author / Chapter and book title
1.	**N. Andrei** *Profesorul Moisil – creatorul informaticii în România.*

	In: Afrodita Iorgulescu, Solomon Marcus, Sergiu Rudeanu, Dragoş Vaida (Eds.), *GRIGORE C. MOISIL şi continuatorii săi în domeniul informaticii teoretice*, Editura Academiei Române, 2007, p. 240-244.

9. Technical Reports (partial list)
(2000 – present)

- **N. Andrei,** Adaptive Perry conjugate gradient algorithms based on the self-scaling memoryless BFGS update. ICI Technical Report, October 5, 2016.
- **N. Andrei,** Optimality conditions for continuous nonlinear optimization. ICI Technical Report, January 12, 2016.
- **N. Andrei,** Descent Conjugate Gradient Algorithm with quasi-Newton updates. ICI Technical Report. November 6, 2015.
- **N. Andrei,** A new adaptive conjugate gradient algorithm for large-scale unconstrained optimization. ICI Technical Report, June 18, 2015.
- **N. Andrei,** An adaptive conjugate gradient algorithm for large-scale unconstrained optimization. ICI Technical Report, May 20, 2015.
- **N. Andrei,** Test functions for unconstrained optimization. ICI Technical Report, June 20, 2013.
- **N. Andrei,** A numerical study on efficiency and robustness of some conjugate gradient algorithms for large-scale unconstrained optimization. ICI Technical Report, May 22, 2013.
- **N. Andrei,** Performance of AHYBRIDM, ASCALCG, CG-DESCENT, DESCON and THREECG for solving 5 applications from MINPACK-2. ICI Technical Report, April 3, 2013.
- **N. Andrei,** Another numerical example for CG_DESCENT conjugate gradient algorithm. ICI Technical Report, January 4, 2013.
- **N. Andrei,** A numerical example for CG_DESCENT conjugate gradient algorithm. ICI Technical Report, November 15, 2012.
- **N. Andrei,** DESCON versus CG-DESCENT for solving 5 applications from MINPACK2. ICI Technical Report, September 13, 2012.
- **N. Andrei,** Some more comparisons of DESCON with different values for the parameter „maxls" versus CG-DESCENT. ICI Technical Report, September 12, 2012.
- **N. Andrei,** Comparisons: DESCON versus CG-DESCENT**.** ICI Technical Report, September 10, 2012.
- **N. Andrei,** CPU time metric comparisons: DESCON, TTS, CG-DESCENT . ICI Technical Report, July 18, 2012.
- **N. Andrei**, An accelerated subspace minimization three-term conjugate gradient algorithm for unconstrained optimization. ICI Technical Report, July 12, 2012.
- **N. Andrei,** On three-term conjugate gradient algorithms for unconstrained optimization. ICI Technical Report, March 14, 2012.
- **N. Andrei,** A simple three-term conjugate gradient algorithm for unconstrained optimization. ICI Technical Report, March 6, 2012.
- **N. Andrei,** WORKS 2011, Bucharest, December 2011. (Romanian Academy Library, with CD)
- **N. Andrei,** Metoda MINOS, Raport Tehnic ICI, 8 August, 2011
- **N. Andrei,** UNO: A package for unconstrained optimization methods using direct searching techniques. ICI Technical Report. April 20, 2011.
- **N. Andrei,** CAON: O Colectie de Aplicatii de Optimizare Neliniara in limbajul GAMS. ICI Technical Report No.1/2011, Ianuarie 31, 2011.
- **N. Andrei,** WORKS 2010, Bucharest, December 2010. (Romanian Academy Library, with CD)
- **N. Andrei,** Another accelerated conjugate gradient algorithm with guaranteed descent and conjugacy conditions for large-scale unconstrained optimization, ICI Technical Report, November 29, 2010
- **N. Andrei,** Performances of SPG for solving MINPACK-2 applications. ICI Technical Report, September 14, 2010

- **N. Andrei,** Comparison between LBFGS-B and SPG with cubic interpolation in line search. ICI Technical Report, September 1, 2010
- **N. Andrei**, Comparison between SPG with quadratic interpolation and SPG with cubic interpolation. ICI Technical Report, August 31, 2010
- **N. Andrei**, Comparison between LBFGS-B and SPG with quadratic interpolation in line search. ICI Technical Report, August 31, 2010
- **N. Andrei,** Comparison LBFGS-B versus LBFGS. ICI Technical Report, August 10, 2010
- **N. Andrei**, Computational results for LBFGS-B. ICI Technical Report, August 10, 2010
- **N. Andrei,** Performances of LBFGS-B for solving MINPACK-2 applications. ICI Technical Report, August 9, 2010
- **N. Andrei,** Another accelerated conjugate gradient algorithm with guaranteed descent and conjugacy conditions for large-scale unconstrained optimization**,** ICI Technical Report, January 29, 2010
- **N. Andrei,** New Accelerated Conjugate Gradient Algorithms as modification of Dai-Yuan's computational scheme for Unconstrained Optimization, ICI Technical Report, January 27, 2010.
- **N. Andrei,** WORKS 2009, Bucharest, December 2009. (Romanian Academy Library, with CD)
- **N. Andrei,** Accelerated scaled memoryless BFGS preconditioned conjugate gradient algorithm for unconstrained optimization. ICI Technical Report, July 31, 2009
- **N. Andrei**, CGALLACC - Accelerated conjugate gradient algorithms for unconstrained optimization. ICI Technical Report No. 17/2009, March 30, 2009. (Romanian Academy Library, with CD)
- **N. Andrei,** Acceleration of conjugate gradient algorithms for unconstrained optimization. ICI Technical Report No. 16, March 16, 2009
- **N. Andrei**, Accelerated hybrid conjugate gradient algorithm with modified secant condition for unconstrained optimization. ICI Technical Report No. 14, February 23, 2009
- **N. Andrei,** Colectie de prototipuri de modele de optimizare neliniara. ICI Technical Report. January 12, 2009
- **N. Andrei,** WORKS 2008, Bucharest, December 2008. (Romanian Academy Library, with CD)
- **N. Andrei,** An accelerated conjugate gradient algorithm with guaranteed descent and conjugacy conditions for unconstrained optimization. ICI Technical Report No. 36/08, December 10, 2008.
- **N. Andrei,** HYBRID, HYBRIDM, AHYBRIDM conjugate gradient algorithms for unconstrained optimization. Technical report No. 35, October 20, 2008. (Romanian Academy Library, with CD)
- **N. Andrei,** Computational experience with LBFGS - a limited memory BFGS quasi-Newton method for unconstrained optimization. Technical Report No. 32, October 3-14, 2008. (Romanian Academy Library, with CD)
- **N. Andrei,** Numerical experiments with accelerated hybrid conjugate gradient algorithm with modified secant condition - AHYBRID- for unconstrained optimization. ICI Technical Report No. 30/08, September 24, 2008
- **N. Andrei,** Numerical experiments with accelerated conjugate gradient algorithm with Hessian / vector product -ACGHES- for unconstrained optimization. ICI Technical Report No. 29/08, September 22, 2008
- **N. Andrei,** Open Problems in Nonlinear Conjugate Gradient Algorithms for Unconstrained Optimization. ICI Technical Report No. 28/08, July 30, 2008
- **N. Andrei,** New accelerated conjugate gradient algorithms for unconstrained optimization. ICI Technical Report No. 24/08, June 18, 2008
- **N. Andrei,** Accelerated scaled memoryless BFGS preconditioned conjugate gradient algorithm for unconstrained optimization. ICI Technical Report No. 16/08, March 24, 2008
- **N. Andrei,** 40 conjugate gradient algorithms for unconstrained optimization. A survey on their definition. ICI Technical Report No. 13/08, March 14, 2008
- **N. Andrei,** Performance profiles of line-search algorithms for unconstrained optimization. ICI Technical Report No. 12/08, March 5, 2008
- **N. Andrei,** A hybrid conjugate gradient algorithm with modified secant condition for unconstrained optimization. ICI Technical Report No. 3/08, February 6, 2008

- **N. Andrei,** SCALCG - Scaled Conjugate Gradient Algorithms for Unconstrained Optimization. Technical Report No. 17/2007, March 30, 2007 . (Romanian Academy Library, with CD)
- **N. Andrei,** SAMO - Tehnologie Informatica Avansata pentru Modelare si Optimizare. Raport Tehnic No. 18/2007, Martie 8, 2007. (Romanian Academy Library, with CD)
- **N. Andrei,** Another conjugate gradient algorithm for unconstrained optimization. ICI Technical Report No.28/07, August 12, 2007
- **N. Andrei**, New hybrid conjugate gradient algorithms for unconstrained optimization. ICI Technical Report No. 26/07, September 26, 2007
- **N. Andrei,** Numerical comparison of conjugate gradient algorithms for unconstrained optrimization. ICI Technical Report No. 29/07, October 10, 2007
- **N. Andrei,** CGALL - Conjugate Gradient Algorithms for Unconstrained Optimization. Technical Report No. 16/2007, March 5, 2007. (Romanian Academy Library, with CD)
- **N. Andrei,** WORKS 2007, Bucharest, December 2007. (Romanian Academy Library)
- **N. Andrei,** WORKS 2006, Bucharest, December 2006. (Romanian Academy Library)
- **N. Andrei,** WORKS 2005, Bucharest, December 2005. (Romanian Academy Library)
- **N. Andrei**, WORKS 2004, Bucharest, December 2004. (Romanian Academy Library)
- **N. Andrei**, Computational experience with SPENBAR - A Sparse Modified Penalty-Barrier Method for Large-Scale Nonlinear, Equality and Inequality, constrained optimization Technical Report No. 4/2001, February 19, 2001. (Romanian Academy Library with CD)
- **N., Andrei,** Numerical Examples with SPENBAR - Modified penalty barrier method for large-scale nonlinear programming problems. Part I. ICI Technical Report, ICI-TR-01/2001, Bucharest, February 2001.

10. Research projects

International projects

Nr.	Project title	Position/Activities Contractor	Period
1.	Domain Driven Design and Mashup oriented development based on Open Source Java Metaframework for Pragmatic, Reliable and Secure Web Development. ROMULUS	*Project manager for Romanian part.* European Commission	24.10.2008-30.11.2009
2.	*Data assimilation with shallow water equations.* Department of Mathematics, Florida State University. Tallahassee, Florida, USA. *Coordinator:* Prof. Michael Navon. Department of Mathematics and Supercomputer	*Researcher.* Solving of shallow-water equations model using conjugate gradient algorithms. Numerical experiments, comparisons, complexity studies. Comparisons with: Truncated Newton method, L-BFGS method, CONMIN and DESCON.	2009

National projects

(funded based on competition)

Nr.	Project title	Contractor	Period
1.	Elaborarea unor standarde tehnice pentru sprijinirea programului național de	MCSI	04.08.2011-30.08.2014

	reducere a vulnerabilităţilor şi ameninţărilor cibernetice		
2.	Proiectare orientată spre domeniu şi dezvoltare orientată spre mashup bazate pe Open Source Java Metaframework pentru dezvoltarea de software Web pragmatică, fiabilă şi sigură	ANCS	24.10.2008-30.11.2009
3.	Elaborarea de proceduri de evaluare a nivelului de securitate asigurat de aplicaţiile şi sistemele informatice din domeniul administraţiei publice.	MCSI	06.11.2008-30.09.2010
4.	**Project coordinator:** Intărirea Capacităţii Administrative a Institutului Naţional de Cercetare-Dezvoltare în Informatică - ICI Bucureşti" (acronim cITy)	ANCS	16.06.2010-31.12.2010
5.	**Project coordinator:** Proiectarea şi implementarea unei infrastructuri (hardware şi software) de bază pentru realizarea unui centru pilot, la nivel naţional, care să asigure servicii de colectare, diseminare, coordonare şi instruire privind incidentele de securitate în reţelele IT&C - suport tehnic pentru o organizaţie de tip CERT (CSIRT) - Centru pilot.	ANCS	08.09.2008-31.03.2011
6.	Soluţii optimale aeroacustice pentru "green operation" în domeniul vehiculelor rutiere şi aeriene - SOGORA. Fundamentarea bazelor teoretice şi experimentale pentru configuraţii optime aeroacustice în domeniul transporturilor.	CNMP PNII	15.09.2008-30.09.2011
7.	Dezvoltarea strategiei de implementare a programului naţional de Supercomputing	MCSI	20.11.2009-24.12.2009
8.	**Project coordinator:** Colecţie de prototipuri de modele matematice de optimizare la nivel industrial, operaţionale GRID, pentru rezolvarea problemelor complexe.	Program Nucleu PRONOVA	2006-2008
9.	**Project coordinator:** Cercetări privind procesul ştiinţific şi fundamentele modelării matematice în elaborarea unei colecţii de prototipuri de modele matematice de optimizare utilizabile la nivel industrial.	Program Nucleu THESIN	2009-2013
10.	Analiza, evaluare şi decizie pentru managementul Cloud Computing	Program Nucleu	2016-2017

Projects of national importance (over 1 mil. EURO)

(Funded based on competition)

10.	**Project coordinator:** **Dr. Neculai Andrei** ***Data Center and Cloud Computing***	Program intern ICI-Bucureşti	2012-2013

11.	**Project coordinator:** **Dr. Neculai Andrei** ***Cloud infrastructure for public institutions in Romania – ICIPRO***	POS CCE: Apel nr.5/ Axa prioritară 3/ Operaţiunea 3.2.1	2013-2015

11. ORDA Patents

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No.	Title of products licensed ORDA	ORDA code
1.	SAMO – Tehnologie informatică avansată pentru modelare şi optimizare.	11370009
2.	CGALL – Pachet de optimizare neliniară fără restricţii.	113700012
3.	SCALCG – Software de optimizare fără restricţii bazat pe algoritmi de gradient conjugat.	113700010
4.	SPENBAR – Pachet de optimizare cu restricţii neliniare, egalităţi şi/sau inegalităţi de mari dimensiuni.	113700011

January 20, 2017