PERSONAL INFORMATION

Simone Rebegoldi

simone.rebegoldi@unimore.it

Sex Male | Nationality Italian

POSITION

Research Fellow

WORK EXPERIENCE

November 2023 – present

Research Fellow

Department of Physics, Informatics and Mathematics, University of Modena and Reggio Emilia (IT)

Type B fixed-term researcher (RTDB) recruited with a three-year contract

March 2020 – October 2023

Research Fellow

Department of Industrial Engineering, University of Florence (IT)

Type A fixed-term researcher (RTDA) recruited with a three-year contract

February 2019 – February 2020

Postdoctoral Fellow

Department of Biomedical, Metabolic and Neural Sciences, University of Modena and Reggio Emilia (IT)

Fellowship on “Pathology prediction models and computational approaches”

Supervisor: Prof. Carlo Adolfo Porro

February 2017 – January 2019

Postdoctoral Fellow

Department of Mathematics and Computer Science, University of Ferrara (IT)

Fellowship on “Numerical methods for nonconvex nondifferentiable optimization”

Supervisor: Dr. Silvia Bonettini

EDUCATION AND TRAINING

January 2014 – December 2016

Ph.D. in Mathematics

Agreement between the Universities of Ferrara, Modena and Reggio Emilia, Parma (IT)

Ph.D. scholarship provided by the Italian government

- Advisor: Prof. Marco Prato
- Research interests: numerical methods for nonlinear optimization, regularization of ill-posed inverse problems in astronomy and microscopy
- Thesis title: “Variable metric line—search based methods for nonconvex optimization”
- Date of the award: 4 April 2017
- Grade: approved cum laude and additional certification “Doctor Europaeus”

December 2011 – October 2013

Master Degree in Mathematics

University of Modena and Reggio Emilia

- Thesis title: “Analysis of an alternating minimization method for blind deconvolution problems in astronomy”
- Grade: 110/110 cum laude

September 2008 – December 2011

Bachelor Degree in Mathematics

University of Modena and Reggio Emilia

- Thesis title: “Brouwer, Kakutani and Nash: Fixed point theorems and Game Theory”
- Grade: 110/110 cum laude

SCIENTIFIC ACTIVITY

Journal Articles

- F. Argenti, S. Bellavia, M.Fontani, G. Guarnieri, M. Jerian, A.Limone, S. Rebegoldi, A Proposed Workflow for the Restoration of Image Artifacts in Forensic Applications, *IEEE Access* 12, 88303-88321, 2024.
- S. Bonettini, M. Prato, S. Rebegoldi, A new proximal heavy ball inexact line-search algorithm, *Computational Optimization and Applications* 88, 525-565, 2024
- S. Bellavia, B. Morini, S.Rebegoldi, An investigation of stochastic trust-region based algorithms for finite-sum minimization, *Optimization Methods and Software*, dx.doi.org/10.1080/10556788.2024.2346834, 2024

- S. Rebegoldi, Analysis of a variable metric block coordinate method under proximal errors, *Annali dell'Università di Ferrara* 70, 23-61, 2024.
- S. Crisci, S. Rebegoldi, G. Toraldo, M. Viola, Barzilai-Borwein-like rules in proximal gradient schemes for \ell_1-regularized problems, *Optimization Methods and Software*, dx.doi.org/10.1080/10556788.2023.2285489, 2024.
- S. Bonettini, D. Pezzi, M. Prato, S. Rebegoldi, On an iteratively reweighted linesearch based algorithm for nonconvex composite optimization, *Inverse Problems* 39(6), 064001, 2023.
- S. Bonettini, P. Ochs, M. Prato, S. Rebegoldi, An abstract convergence framework with application to inertial inexact forward-backward methods, *Computational Optimization and Applications* 84(1), 319-362, 2023.
- S. Bellavia, N. Krejić, B. Morini, S. Rebegoldi, A stochastic first-order trust-region method with inexact restoration for finite-sum minimization, *Computational Optimization and Applications* 84(1), 53-84, 2023.
- S. Bonettini, M. Prato, S. Rebegoldi, A nested primal—dual FISTA-like scheme for composite convex optimization problems, *Computational Optimization and Applications* 84(1), 85-123, 2023.
- S. Bellavia, B. Morini, S. Rebegoldi, On the Convergence Properties of a Stochastic Trust-Region Method with Inexact Restoration, *Axioms* 12(1), 38, 2023.
- S. Rebegoldi, L. Calatroni, Scaled, inexact and adaptive generalized FISTA for strongly convex optimization, *SIAM Journal on Optimization* 32(3), 2428-2459, 2022.
- S. Bonettini, M. Prato, and S. Rebegoldi, *New convergence results for the inexact variable metric forward—backward method*, Applied Mathematics and Computation 392, 125719, 2021.
- S. Bonettini, M. Prato, and S. Rebegoldi, *Convergence of inexact forward-backward algorithms using the forward-backward envelope*, SIAM Journal on Optimization 30(4), 3069-3097, 2020
- S. Bonettini, S. Rebegoldi, and V. Ruggiero, *Inertial variable metric techniques for the inexact forward–backward algorithm*, SIAM Journal on Scientific Computing 40(5), A3180-A3210, 2018
- S. Bonettini, M. Prato, and S. Rebegoldi, *A block coordinate variable metric linesearch based proximal gradient method*, Computational Optimization and Applications, 1-48, 2018

- S. Rebegoldi, L. Bautista, L. Blanc Féraud, M. Prato, L. Zanni and A. Plata, *A comparison of edge-preserving approaches for DIC microscopy,* Inverse Problems 33, 085009, 2017

- S. Bonettini, I. Loris, F. Porta, M. Prato and S. Rebegoldi, *On the convergence of a linesearch based proximal-gradient method for nonconvex optimization,* Inverse Problems 33, 055005, 2017

- S. Bonettini, M. Prato and S. Rebegoldi, *A cyclic block coordinate descent method with generalized gradient projections,* Applied Mathematics and Computation 286, 288-300, 2016

- M. Prato, A. La Camera, S. Bonettini, S. Rebegoldi, M. Bertero, and P. Boccacci, *A blind deconvolution method for ground-based telescopes and Fizeau interferometers*, New Astronomy 40, 1-13, 2015

Conference Proceedings

- L. Calatroni, and S. Rebegoldi, A scaled, inexact and adaptive Fast Iterative Soft-Thresholding Algorithm for convex image restoration, *2021 21st International Conference on Computational Science and Its Applications (ICCSA)*, 47-53, 2021

- S. Rebegoldi, S. Bonettini, and M. Prato, A comparison of nested primal-dual forward-backward methods for Poisson image deblurring, *2021 21st International Conference on Computational Science and Its Applications (ICCSA)*, 87-92, 2021

- M. Lazzaretti, S. Rebegoldi, L. Calatroni, and C. Estatico, A scaled and adaptive FISTA algorithm for signal-dependent sparse image super-resolution problems, *Lecture Notes in Computer Science* 12679, 242-253, 2021

- S. Rebegoldi, S. Bonettini and M. Prato, *Efficient block coordinate methods for blind Cauchy denoising*, Lecture Notes in Computer Science 11973, 198-211, 2020

- S. Rebegoldi, S. Bonettini, M. Prato, *A Bregman inexact linesearch-based forward-backward algorithm for nonsmooth nonconvex optimization*, Journal of Physics: Conference Series 1131, 012013, 2018

- Bechensteen, S. Rebegoldi, G. Aubert, and L. Blanc-Féraud, *ℓ2-ℓ0 optimization for single molecule localization microscopy*, Optics InfoBase Conference PapersF105-MATH 2018, 140098, 2018

- S. Rebegoldi, L. Bautista, L. Blanc-Féraud, M. Prato, L. Zanni, and A. Plata, *TV-Regularized Phase Reconstruction in Differential-Interference-Contrast (DIC) Microscopy*, AIP Conference Proceedings 1776, 090043, 2016

- M. Prato, S. Bonettini, I. Loris, F. Porta, and S. Rebegoldi, *On the constrained minimization of smooth Kurdyka-Lojasiewicz functions with the scaled gradient projection method*, Journal of Physics: Conference Series 756, 012004, 2016

- L. Bautista, S. Rebegoldi, L. Blanc-Féraud, M. Prato, L. Zanni, and A. Plata, *Phase estimation in differential-interference-contrast (DIC) microscopy*, Proceedings IEEE International Symposium on Biomedical Imaging, 136-139, 2016

- S. Rebegoldi, S. Bonettini, and M. Prato, *Application of cyclic block generalized gradient projection methods to Poisson blind deconvolution,* Proceedings of the European Signal Processing Conference 2015, 225-229, 2015

- M. Prato, S. Bonettini, A. La Camera, and S. Rebegoldi, *Alternating minimization for Poisson blind deconvolution in astronomy*, Proceedings of the Inverse Problems from Theory to Applications Conference (IPTA 2014), 148-152, 2014

Book Chapters

- J.-B. Fest, T. Heikkila, I. Loris, S. Martin, L. Ratti, S. Rebegoldi, and G. Sarnighausen, On a fixed-point continuation method for a convex optimization problem, In: *Advanced Techniques in Optimization for Machine Learning and Imaging (ATOMI)*, Springer INDAM Series, accepted for publication, 2024.

- S. Bonettini, F. Porta, M. Prato, S. Rebegoldi, V. Ruggiero and L. Zanni, *Recent Advances in Variable Metric First-Order Methods*. In: Donatelli M., Serra-Capizzano S. (eds) Computational Methods for Inverse Problems in Imaging, Springer INdAM Series 36, Springer, Cham, 2019

Conference Presentations (invited speaker)

- "SMILE Sustainable Medical Imaging with Learning and regularization", Como, 28 August – 1 September 2023. Presentation title: "*Proximal splitting methods for imaging*".

- International Conference on Continuous Optimization (ICCOPT) 2022, Bethlehem, USA, 25-28 July 2022. Presentation title: "*First-Order Subsampled Trust-Region Method with Inexact Restoration for Finite-Sum Minimization*".

- EURO Conference 2022, Aalto University, Helsinki, 3-6 July 2022. Presentation title: "*An inexact restoration trust-region method with subsampling for finite-sum minimization*".

- INdAM Workshop ``Advanced Techniques in Optimization for Machine Learning and Imaging (ATOMI)". Presentation title: "*On a subsampled trust-region method with random models for finite-sum minimization*".

- 10th International Conference "Inverse Problems: Modelling and Simulation", Malta, 22-28 May 2022. Presentation title: "*A scaled adaptive FISTA-like algorithm for super-resolution image microscopy*".

- SIAM Conference on Imaging Science (IS22), virtual conference, 21-25 March 2022. Presentation title: *"IPila: Inertial Proximal Inexact Line-Search Algorithm for Nonconvex Optimization"*.

- International Conference on Computational Science and its Applications (ICCSA), Cagliari, 13-16 September 2021. Presentation title: "*A comparison of nested primal-dual forward-backward methods for Poisson image deblurring*".

- Optimization Techniques for Inverse Problems IV, Modena, 6-7 September 2021. Presentation title: "*Stochastic trust-region method with adaptive sample sizes for finite-sum minimization problems*".

- SIMAI Congress 2020+2021, Parma, 30 August – 3 September 2021. Presentation title: "*Scaled, adaptive and generalized FISTA algorithm for sparse image super-resolution problems*".

- SIAM Conference on Computational Science and Engineering (CSE21), virtual conference, 1--5 March 2021. Presentation title: "*A stochastic first-order trust-region method with inexact restoration for classification problems*".

- UMI MIVA Kick-off event, virtual conference, 20 January 2021. Presentation title: "*SAGE-FISTA: metodi accelerati e scalati con backtracking adattativo per problemi di imaging*".

- BOS/SOR Conference 2020, virtual conference, 15 December 2020. Presentation title: "*A stochastic inexact restoration trust-region method with application to machine learning*".

- SIAM Conference on Imaging Science 2020 (IS20), virtual conference, 6 – 17 July 2020. Presentation title: "*Novel Convergence Results for a Variable Metric Inexact Forward-Backward Algorithm in the Nonconvex Setting*".

- STRUCTAPP2020, L'Aquila, Italy, 23 – 24 January 2020. Presentation title: "*Inexact variable metric linesearch based methods with applications to image processing*".

- 23rd International Symposium on Mathematical Programming (ISMP), Bordeaux, France, 1 – 6 July 2018. Presentation title: "*Variable metric techniques for the inexact inertial forward-backward algorithm*".

- INdAM GNCS Meeting 2018, Hotel Belvedere, Montecatini Terme, Italy, 14 – 16 February 2018. Presentation title: "*Metodi iterativi a metrica variabile per l'ottimizzazione non differenziabile con applicazione all'imaging*".

- 18th French-German-Italian Conference on Optimization, Paderborn, Germany, 25 – 28 September 2017. Presentation title: "*A block-coordinate variable metric line-search based proximal-gradient method for nonconvex optimization*".

- SIAM Conference on Optimization 2017 (OP17), Vancouver, 22 – 25 May 2017. Presentation title: "*Application of recent first-order methods to DIC microscopy*".
- SIMAI Congress 2016, Milan, Italy, 13 – 16 September 2016. Presentation title: "*Accelerated gradient-based methods for phase estimation in differential-interference-contrast microscopy*".
- 46th Annual Conference of the Italian Operations Research Society (AIRO) 2016, Trieste, Italy, 6 – 9 September 2016. Presentation title: "*A new inexact forward-backward algorithm with applications in image processing"*.
- European Signal Processing Conference (EUSIPCO) 2015, Nice, 31 August – 4 September 2015. Presentation title: "*Application of cyclic block generalized gradient projection methods to Poisson blind deconvolution"*.

Conference Presentations (contributed talks)

- UMI Workshop "Matematica per l'Intelligenza Artificiale e il Machine Learning: Giovani Ricercatori", Turin, 24-26 November 2022. Presentation title: "*On a stochastic first-order trust-region method for machine learning applications*".
- IFIP Workshop on "Inverse Problems, Imaging, and Optimization", Essen, Germany, 6-8 January 2020. Presentation title: "*Convergence of inexact forward-backward algorithms using the forward-backward envelope*".
- International Conference on Continuous Optimization (ICCOPT) 2019, Berlin, Germany, 5-9 August 2019. Presentation title: "*Convergence analysis of an inexact forward-backward scheme using the forward-backward envelope*".
- Numerical Computations: Theory and Algorithms 2019, Isola di Capo Rizzuto, Italy, 15-21 June 2019. Presentation title: "*Convergence of an inexact forward-backward method for nonconvex nonsmooth problems*".
- Vienna Workshop on Computational Optimization, Vienna, Austria, 17-19 December 2018. Presentation title: *"A variable metric approach for the inexact inertial forward-backward method".*
- 24th Inverse Days, Helsinki, Finland, 11-13 December 2018. Presentation title: "*A block coordinate variable metric linesearch based approach for blind deconvolution*".
- Workshop "Computational Methods for Inverse Problems in Imaging" (CMIPI), Como, Italy, 16-18 July 2018. Presentation title: "*An alternating variable metric inexact linesearch based algorithm for nonconvex nonsmooth optimization".*

- 8th International Conference on New Computational Methods for Inverse Problems (NCMIP) 2018, Cachan, France, 25 May 2018. Presentation title: "*A Bregman inexact linesearch–based forward–backward algorithm for nonsmooth nonconvex optimization*".

- Numerical Computations: Theory and Algorithms (NUMTA) 2016, Pizzo Calabro, Italy, 19 – 25 June 2016. Presentation title: "*An efficient gradient-based method for differential-interference-contrast microscopy".*

- SIAM Conference on Imaging Science 2016 (IS16), Albuquerque, New Mexico, U.S.A., 23 – 26 May 2016. Presentation title: *"A new variable metric line-search proximal-gradient method for image reconstruction".*

- IFIP WG 7.4 Workshop on Inverse Problems and Imaging, Mülheim a.d. Ruhr, Germany, 14 – 16 December 2015. Presentation title: *"Generalized gradient projection approaches for blind deconvolution".*

Poster Presentations

- Optimization techniques for Inverse Problems (OIP), Modena, Italy, 19 – 21 September 2016. Poster title: *"Optimization methods for phase estimation in differential-interference-contrast (DIC) microscopy".*

- Winter school on "Computational Harmonic Analysis – with applications", Marseille, France, 20 – 24 October 2014. Poster title: *"An alternating minimization method for blind deconvolution in astronomy"*.

Research Projects (Principal Investigator or Partner)

- 2022 PRIN Project: Inverse problems in PDE: theoretical and numerical analysis
  Role: Local Coordinator

- 2022 INdAM GNCS Research Project: Adaptive Optimization for Machine Learning.
  Role: PI.

- 2021 CNRS International Emerging Actions (IEA) Projet: Variable-Metric and inexact sparse Optimisation for Super-resolution microscopy (VaMOS).
  Role: Foreign PI

Research projects (participant)

- 2024 INdAM GNCS: Deep Variational Learning: a combined approach for imaging
- 2023 INdAM GNCS: Data-driven optimization methods: new theoretical and practical perspectives
- 2022 PRIN PNRR: Advanced optimization METhods for automated central veIn Sign detection in multiple sclerosis from magneTic resonAnce imaging (AMETISTA)
- 2019-2022: Second order methods for optimisation problems in machine learning. Project for the exchange of researchers selected within the frame of the executive Program of Cooperation in the Field of Science and Technology between Italy and Serbia.
- 2020 INdAM GNCS: Numerical optimization in Image Restoration and Reconstruction
- 2019 INdAM GNCS: Advanced methods in nonlinear optimization for image processing
- 2016 INdAM GNCS: New frontiers of nonsmooth optimization in inverse problems.
- 2015 UNIMORE FAR: Economic decision-making: Empathic social interactions, neural correlates and prediction models.
- 2014 UNIMORE FAR: New optimization strategies for image reconstruction.
- 2014 UNIMORE Mobility Actions: Optimization methods for inverse problems and parameters estimation.
- 2012 FIRB Future in Research: Learning meets time: a new computational approach for learning in dynamic systems.

Research Grants Supports

- 2017 INdAM: Research grant for a visiting period in foreign institutions. Amount of the grant: 4000 euros. Chosen foreign institution: Laboratoire I3S, Université Nice-Sophia Antipolis, France.
- 2017 INdAM GNCS Young Researchers Financial Support: Acceleration techniques and automatic parameters selection in inexact first-order methods.
- 2016 INdAM GNCS Young Researchers Financial Support: Alternating variable metric optimization methods for nonconvex nondifferentiable optimization.

Awards

- Selection of the publication "S. Bonettini, I. Loris, F. Porta, M. Prato and S. Rebegoldi 2017, Inverse Problems 33, 055005" for the Inverse Problems 2017 Highlights Collection.
- 2017 University of Ferrara: award for the best Ph.D. thesis in Mathematics (Cycle XXIX).
- Francesco Manni Foundation research grant: financial support for young researchers graduated at the University of Modena and Reggio Emilia.
- SIAM Student Travel Award: financial support to attend the "SIAM Conference on Optimization 2017 (OP17)", Vancouver, Canada, 22 – 25 May 2017.
- SIAM Student Travel Award: financial support to attend the "SIAM Conference on Imaging Science 2016 (IS16)", Albuquerque, U.S.A., 23 – 26 May 2016.
- GNCS - INdAM 2015: financial support to attend the "European Signal Processing Conference (EUSIPCO) 2015", Nice, 31 August – 4 September 2015.

Periods abroad

- February 2018 – March 2018, Université Nice Sophia Antipolis, France. Two-month period at Laboratoire d'Informatique, Signaux et Systèmes (I3S) de Sophia Antipolis. Collaboration with Prof. Laure Blanc-Féraud on a sparse optimization problem in super resolution microscopy.
- May 2015 – July 2015, Université Nice Sophia Antipolis, France. Three-month period at Laboratoire d'Informatique, Signaux et Systèmes (I3S) de Sophia Antipolis. Collaboration with Prof. Laure Blanc-Féraud on the research project "Analysis of recent optimization techniques for imaging problems in microscopy".

Workshops organization

- *Advanced optimization methods for inverse problems & applications to image microscopy"*, Centro Didattico Morgagni, Firenze, 22-23 novembre 2021. Workshop organizzato nell'ambito del progetto CNRS VaMOS.

Special issues organization

- *"Special Issue on Optimisation and Learning Methods for Inverse Problems in Microscopy"* on the *Inverse Problems* journal. Guest Editors: Mario Bertero, Luca Calatroni, Simone Rebegoldi

Minisymposia organization

- *"Optimization and learning for data science and imaging"*, EURO 2024, Copenhagen, Denmark, 30 June – 3 July 2024.
- *"Optimization for data-driven methods"*, Numerical Computations: Theory and Algorithms (NUMTA), Pizzo Calabro, Italy, 14-20 June 2023.
- *"Numerical Optimization for data analysis and imaging",* International Conference on Optimization and Decision Science (ODS AIRO 2022), Florence, Italy, 30 August – 2 September 2022.
- *"Advanced nonlinear optimization methods for image processing"*, SIMAI Congress 2020+2021, Parma, Italy, 30 August – 3 September 2021.
- *"Convex and non-convex first-order optimization for imaging and data analysis"*, SIAM Conference on Optimization 2021, virtual conference, 20-23 July 2021.
- *"Continuous optimization techniques for image processing applications"*, 19th French-German-Swiss Conference on Optimization", Nice, France, 17-20 September 2019.
- *"First Order Methods in Optimization: Theory and Applications"*, Numerical Computations: Theory and Algorithms (NUMTA), Isola Capo Rizzuto, Italy, 15-21 June 2019.

Journal editor

- Review Editor of the section *Mathematics of Computation and Data Science* of the journal *Frontiers in Applied Mathematics and Statistics*.

Refereeing activity

- Refereeing activity for the following journals: *Artificial Intelligence Review*, *Journal of Mathematical Imaging and Vision*, *Inverse Problems, SIAM Journal on Optimization*, *SIAM Journal on Imaging Sciences*, *IEEE Transactions on Signal Processing*, *Computational Optimization and Applications*, *Numerical Algorithms*, *Electronic Transactions on Numerical Analysis*, *Journal of Computational and Applied Mathematics*.

Thesis supervisor

- "*L'algoritmo XGBoost: aspetti teorici e applicazioni*", Master Degree in Mathematics, University of Florence, A.Y. 2021/2022.
- "*Metodi di ottimizzazione non lineare per la ricostruzione di immagini da microscopia DIC*", Master Degree Thesis in Mathematics, University of Modena and Reggio Emilia, A.Y. 2018/2019.
- *"Il metodo del gradiente coniugato non lineare"*, Bachelor Degree Thesis in Mathematics, University of Modena and Reggio Emilia, A.Y. 2017/2018.

TEACHING ACTIVITY

Undergraduate courses

Numerical Analysis

Department of Physics, Informatics and Mathematics, University of Modena and Reggio Emilia

- Teaching activity for the course “Analisi Numerica” (Numerical Analysis), Bachelor Degree in Mathematics, and “Calcolo Numerico” (Numerical Analysis), Bacher Degree in Informatics
- Years: 2023/2024

Numerical Methods for Engineering

Department of Industrial Engineering, University of Florence

- Teaching activity for the course “Metodi Numerici per l’Ingegneria” (Numerical Methods for Engineering), Master Degree in Environmental Engineering
- Years: 2020/2021, 2021/2022

Numerical Analysis

Department of Industrial Engineering, University of Florence

- Teaching activity for the courses “Calcolo Numerico” (Numerical Analysis), Bachelor Degrees in Computer Engineering and Electronic Engineering
- Years: 2019/2020, 2020/2021, 2021/2022

Numerical Analysis and Statistics

Department of Engineering (DIEF), University of Modena and Reggio Emilia

- Teaching activity for the course “Analisi Numerica e Statistica” (Numerical Analysis and Statistics), Bachelor Degree in Computer Engineering
- Years: 2019/2020

Numerical Analysis

Department of Physics, Informatics and Mathematics, University of Modena and Reggio Emilia

- Teaching activity for the course “Analisi Numerica A” (Numerical Analysis), Bachelor Degree in Mathematics
- Years: 2019/2020

Numerical Analysis

Department of Physics, Informatics and Mathematics, University of Modena and Reggio Emilia

- Tutoring activity for the course “Calcolo Numerico” (Numerical Analysis), Bachelor Degree in Informatics
- Years: 2018/2019

Numerical Analysis

Department of Mathematics and Computer Science, University of Ferrara

- Supplementary teaching and tutoring activity for the course “Calcolo Numerico e Laboratorio” (Numerical Analysis), Bachelor Degree in Informatics
- Years: 2016/2017, 2018/2019

Mathematical Physics

Department of Sciences and Methods for Engineering, University of Modena and Reggio Emilia

- Supplementary teaching and tutoring activity for the course “Meccanica Razionale” (Analytical Mechanics), Bachelor Degree in Mechatronics Engineering
- Years: 2016/2017, 2017/2018, 2018/2019

Discrete Mathematics

Department of Mathematics and Computer Science, University of Ferrara

- Supplementary teaching activity for the course “Matematica Discreta” (Linear Algebra), Bachelor Degree in Informatics
- Years: 2015/2016, 2016/2017, 2017/2018, 2018/2019

Linear Algebra

Department of Physics, Informatics and Mathematics, University of Modena and Reggio Emilia

- Tutoring activity for the courses “Algebra Lineare”, “Geometria” (Linear Algebra and Geometry), Bachelor Degree in Informatics and Mathematics
- Years: 2013/2014

Graduate courses

Numerical Optimization Methods for Neural Network Training

Ph.D. program in Industrial Engineering, University of Florence

- Years: 2021/2022, 2022/2023

Variational Methods for Imaging

Ph.D. program in Mathematics, University of Florence

- Years: 2021/2022

Advanced Methods for Mathematical Image Analysis

Winter School organized by the Italian UMI-MIVA Group, University of Modena and Reggio Emilia

- Years: 2021/2022

Gradient-based optimization methods for neural network training

Ph.D. program in Industrial Engineering, University of Florence

- Years: 2020/2021

Variational Methods for Imaging

Ph.D. program in Mathematics, University of Modena and Reggio Emilia

- Years: 2020/2021, 2023/2024

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s)

UNDERSTANDING		SPEAKING		WRITING
Listening	Reading	Spoken interaction	Spoken production	
C1	C1	C1	C1	C1

English

Certificate of Advanced English (CAE) C1
First Certificate of English (FCE) B2
Preliminary English Test (PET) B1

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
Common European Framework of Reference for Languages

Computer skills

- Excellent knowledge of MATLAB
- Basic knowledge of Python, C++, Java
- Practical knowledge of MS Excel, MS Word and MS PowerPoint

Driving licence B

Last updated on 11/09/2024