

Ilias I. Giannakopoulos, PhD

Postdoctoral Fellow, Department of Radiology
The Bernard and Irene Schwartz Center for Biomedical Imaging
NYU Langone Health - NYU Grossman School of Medicine

NIH/NIBIB K99/R00 Awardee
ISMRM Junior Fellow
IEEE Senior Member

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Research Interests

Computational and learning-based methods for biomedical engineering and biomedical imaging. Computational electromagnetics, electrical property mapping, MRI image reconstruction, radiofrequency coil design for high and ultra-high field MRI, numerical linear algebra, optimization, deep learning

Education

- 09/2016–09/2020 **PhD in Computational and Data Science and Engineering (CDISE)**
Skolkovo Institute of Science and Technology (Skoltech), Moscow, Moscow Oblast, Russian Federation
Thesis: [Memory compression of the Galerkin volume integral equation and coil modeling for the electrical property mapping of biological tissue](#)
Supervisors: Dr. Athanasios G. Polimeridis (2016–2017), Dr. Maxim Fedorov (2018–2020)
Co-Supervisor: Dr. Jacob K. White (2016–2020)
- 10/2018–11/2019 **Visiting PhD student, Research Laboratory of Electronics (RLE), Department of Electrical Engineering and Computer Science (EECS)**
Massachusetts Institute of Technology (MIT), Cambridge, MA, USA
Invited by Dr. Jacob K. White
- 09/2011–07/2016 **Diploma in Electrical and Computer Engineering**
Aristotle University of Thessaloniki (AUTH), Thessaloniki, Greece.
Specialization: Telecommunications
Thesis: [Analysis of Planar Microwave and Photonic devices using the method of Integral Equations and the Calculation of the Green function of Multilayered media](#)
Supervisor: Dr. Traianos Yioultsis

Work Experience

- 03/2021–05/2026 **Postdoctoral Fellow**, Bernard and Irene Schwartz Center for Biomedical Imaging (CBI), Department of Radiology, New York University (NYU) Grossman School of Medicine
Supervisor: Dr. Riccardo Lattanzi
- 10/2018–11/2019 **Graduate Research Assistant**, MIT, EECS.
Member of the RLE Computational Prototyping Group
- 09/2016–09/2020 **Graduate Research Assistant**, Skoltech, CDISE.
Member of the CDISE Computational Prototyping and Computational Imaging Groups

Grants

Principal Investigator

- 08/2024–05/2026 **K99 EB035163 (Giannakopoulos, I.) NIH/NIBIB**, *Open-Source Software Tools for Rapid Radiofrequency Coil Modeling and Simulation in MRI*

Honors and Awards

- 10/2025–now **IEEE Senior Member**
- 06/2025 **Editor's Choice**, MRM
- 05/2025–05/2035 **ISMRM Junior Fellow**, Mentor: Dr. John Pauly
- 05/2025 **Educational Stipend Award**, ISMRM 2025
- 03/2025 **Editor's Choice**, MRM
- 05/2024 **Annual Meeting Program Committee (AMPC) selected abstract**, ISMRM 2024
- 05/2024 **Magna Cum Laude Merit Award**, ISMRM 2024

- 05/2024 **Finalist submission**, 2024 ISMRM-EMTP study group abstract competition
- 03/2024 Winner of the NYU Grossman School of Medicine Postdoctoral Association's official [Icon Competition](#)
- 03/2024 **Distinguished Specialist Scientist**, Hellenic Ministry of Defense
- 02/2024 **Editor's Choice**, MRM
- 09/2023 **2023 Outstanding Postdoctoral Scholar Award**, NYU Langone Health
- 07/2023 **2023 Harold A. Wheeler Prize Paper Award**, IEEE AP-S
- 02/2023 **Educational Stipend Award**, ISMRM 2023
- 05/2022 **Finalist submission**, 2022 ISMRM-EMTP study group abstract competition
- 02/2022 **Educational Stipend Award**, ISMRM 2022
- 02/2022 **Educational Stipend Award**, ISMRM Workshop on Ultra-High Field MR, 2022
- 03/2021 **Educational Stipend Award**, ISMRM 2021
- 05/2018 **Honorable Mention Award**, 2018 IEEE AP-S Student Paper Competition
- 09/2014 **Honorary Scholarship**, Greek State Scholarships Foundation

Invited Research Visits

- 03/2026 **UC Berkeley, Department of Electrical Engineering and Computer Sciences, Berkeley, CA, USA**
Invited by Dr. Chunlei Liu (two days)
- 04/2025 **UT Southwestern, Advanced Imaging Research Center, Dallas, TX, USA**
Invited by Dr. Bei Zhang (two days)
- 01/2025 **Massachusetts General Hospital, Athinoula A. Martinos Center for Biomedical Imaging, Charlestown, MA, USA**
Invited by Drs. Bastien Guerin and Jason Stockmann (two days)
- 10/2019 **NYU Grossman School of Medicine, Bernard and Irene Schwartz Center for Biomedical Imaging, New York, NY, USA**
Invited by Dr. Lattanzi, (one week)
- 03/2019 **NYU Grossman School of Medicine, Bernard and Irene Schwartz Center for Biomedical Imaging, New York, NY, USA**
Invited by Dr. Lattanzi, (one week)

Invited Talks

— Conferences & Workshops

- 10/2025 **Electromagnetic simulation tools for the analysis and design of RF coils**, uiSNR and optimal UHF arrays, 15th Biennial Minnesota Workshop, University of Minnesota, Center for Magnetic Resonance Research, Minneapolis, MN, USA
- 09/2024 **ETP-related activities at New York University**, State of the art ETP-related technologies, EMTP Chile, 2024 Joint Workshop on MR Phase, Magnetic Susceptibility and Electrical Properties Mapping, Santiago, Chile

— Seminars

- 03/2026 **Computational Electromagnetics Methods for RF Coil Design**, Department of Electrical Engineering and Computer Sciences, University of California, Berkeley
Invited by Dr. Chunlei Liu
- 02/2026 **Deep Learning for Electrical Properties Tomography: Methods, Challenges, and Future Directions**, APULEIO Project | Trustworthy and quality-assured quantitative magnetic resonance imaging
Invited by Dr. Luca Zilberti
- 12/2025 **Deep Learning for Electrical Properties Tomography: Methods, Challenges, and Future Directions**, ISMRM EMTP Study group Virtual Meeting
Invited by Dr. Stefano Mandija
- 04/2025 **Accelerated computational electromagnetics methods for the analysis and design of MRI systems**, Advanced Imaging Research Center at UT Southwestern, Dallas, TX, USA
Invited by Dr. Bei Zhang

- 02/2025 **Fast Computational and AI-Driven Methods for the Analysis and Design of RF Coils**, BioMedical Engineering and Imaging Institute and Department of Diagnostic, Molecular & Interventional Radiology at Icahn School of Medicine at Mount Sinai, New York, NY, USA
Invited by Dr. Akbar Alipour
- 02/2025 **Electrical Properties Tomography**, CBI's Acquisition and Reconstruction Meetings, Department of Radiology, NYU Grossman School of Medicine, New York, NY, USA
Invited by Drs. Marcelo W. V. Zibetti and Li Feng
- 01/2025 **Fast Computational and AI-Driven Methods in Biomedical Imaging: From Radiofrequency coil modeling to Image Reconstruction**, BrainMap Seminar, Athinoula A. Martinos Center for Biomedical Imaging, Department of Radiology, Massachusetts General Hospital, Charlestown, MA, USA
Invited by Dr. Abbas Sohrabpour
- 05/2024 **Electrical Property Mapping via Magnetic Resonance Imaging**, Electromagnetic Effects Research Laboratory Seminar, School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore
Invited by Dr. Abdulkadir C. Yucel
- 11/2023 **Electrical Property Mapping via Magnetic Resonance Imaging**, Ultrasound and Elasticity Imaging Laboratory Seminar, Columbia University Medical Center, New York, NY, USA
Invited by Dr. Elisa E. Konofagou
- 02/2023 **Computational and machine learning approaches for MRI applications**, Joint Tsirigos Lab and Applied Bioinformatics Laboratories Seminar, Institute for Computational Medicine, NYU Grossman School of Medicine, New York, NY, USA
Invited by Dr. Aristotelis Tsirigos
- 10/2021 **Novel numerical methods based on integral equations for computational electromagnetics applications at ultra-high-field MRI**, Radiology Research Forum and Vilcek Seminars in Biomedical Imaging, Department of Radiology, NYU Grossman School of Medicine, New York, NY, USA
Invited by Dr. Mariana Lazar

Teaching Experience

- 06/2021–now **PhD Thesis Mentoring**, NYU Grossman School of Medicine, Department of Radiology. Mentoring PhD students working on computational electromagnetics, image reconstruction, computational geometry, and machine learning
- 11/2024–now **Semester Project Mentoring**, NYU Courant Institute of Mathematical Sciences. Mentoring undergraduate and graduate students working on various semester projects
- 09/2025–12/2025 **Capstone Team Mentor**, NYU Courant Institute of Mathematical Sciences. Mentoring four undergraduate students working on perceptual losses for MRI image reconstruction
- 09/2024–05/2025 **Capstone Team co-Mentor**, NYU Courant Institute of Mathematical Sciences. Mentoring four undergraduate students working on diffusion neural networks for MRI image reconstruction
- 09/2024–12/2024 **Course Instructor**, NYU Grossman School of Medicine, Department of Radiology, Practical Magnetic Resonance Imaging II
- 02/2018–03/2018 **Graduate Teaching Assistant**, Skoltech, CDISE, Computational Science and Engineering II: Discretization

Patents

- 03/2025 **Radiologist-Informed Image Reconstruction Networks**, Ilias I. Giannakopoulos, Patricia Johnson, Riccardo Lattanzi, *Pending*
- 01/2025 **Adaptive Sampling for Parallel Imaging**. Riccardo Lattanzi, Ilias I. Giannakopoulos, Yvonne W. Lui, *Pending*
- 04/2024 **Systems and Methods for Magnetic Resonance Based Reconstruction and Tomography of Electrical Properties**, Xinling Yu, Ziyue Liu, Zheng Zhang, José E. Cruz Serrallés, Ilias I. Giannakopoulos, Luca Daniel, Riccardo Lattanzi, *Pending*

Research Publications

Journal Articles

- [J1] Damiano Franzó, **Ilias I. Giannakopoulos**, Adrien Merlini, Francesco Andriulli, Riccardo Lattanzi, “Comparative Assessment of Graglia-Wilton-Peterson and Rao-Wilton-Glisson Basis Functions for MRI RF Coil Modeling,” *In preparation*
- [J2] **Ilias I. Giannakopoulos**, Lokesh B Gautham Muthukumar, Yvonne W Lui, Riccardo Lattanzi, “Pixelwise Uncertainty Quantification of Accelerated MRI Reconstruction,” *Under Review*
- [J3] José E. Cruz Serrallés[†], **Ilias I. Giannakopoulos**[†], Siqi Wang[†], Damien Chen, Daniel Zint, Daniele Panozzo, Denis Zorin, Riccardo Lattanzi, “Automatic Design Optimization of Radiofrequency Coils for Magnetic Resonance Imaging,” [†]*Equivalent contribution, Under Review*
- [J4] Stefano Mandija[†], Khin-Khin Tha[†], Nitish Katoch[†], Cihan Göksu, Ulrich Katscher, Rosalind Sadleir, Kyu-Jin Jung, Jierong Luo, **Ilias I. Giannakopoulos**, Dong-Hyun Kim, Karin Schmueli, Riccardo Lattanzi, Yusuf Ziya Ider, Axel Thielscher, Cornelis van den Berg, “Clinical Applications of Electrical Conductivity Imaging ,” [†]*Equivalent contribution, Under review*
Invited
- [J5] **Ilias I. Giannakopoulos**, Bei Zhang, José E. Cruz Serrallés, Ryan Brown, Riccardo Lattanzi, “An Open-Source Software Toolbox for Rapid Radiofrequency Coil Design and Evaluation in MRI,” *Magnetic Resonance in Medicine*, Accepted
- [J6] Stefano Mandija, Alessandro Arduino[†], Chuanjiang Cui[†], Patrick Fuchs[†], **Ilias I. Giannakopoulos**[†], Yusuf Ziya Ider[†], Kyu-Jin Jung[†], Nitish Katoch[†], Ulrich Katscher[†], Dong-Hyun Kim[†], Riccardo Lattanzi[†], Thierry Meerbothe[†], Takaaki Nara[†], Freddy Odille[†], Karin Schmueli[†], Paul Soullie[†], Khin Khin Tha[†], Luca Zilberti[†], Nico van den Berg[†], “Standardization of MR Electrical Properties Tomography publications: A guideline from the ISMRM Electro-Magnetic Tissue Properties Study Group,” *Journal of Magnetic Resonance Imaging*, 2026, [†]*Equivalent contribution*
Invited
- [J7] **Ilias I. Giannakopoulos**[†], Alessandro Arduino[†], Nico van den Berg, Zhongzheng He, Kyu-Jin Jung, Dong-Hyun Kim, Riccardo Lattanzi, Jessica Martinez, Thierry Meerbothe, Freddy Odille, Adriano Troia, Luca Zilberti, Stefano Mandija, “Construction of Phantoms for MR Electrical Properties Tomography (From Structure to Composition): A Guideline From the ISMRM Electro-Magnetic Tissue Properties Study Group,” *Journal of Magnetic Resonance Imaging*, vol. 63, no. 1, pp. 282-285, Jan. 2026, [†]*Equivalent contribution*
Invited
- [J8] Stefano Mandija, Cornelis A.T. van den Berg[†], **Ilias I. Giannakopoulos**[†], Zhongzheng He[†], Yusuf Ziya Ider[†], Kyu-Jin Jung[†], Nitish Katoch[†], Dong-Hyun Kim[†], Riccardo Lattanzi[†], Paul Soullie[†], Ulrich Katscher, “MR Electrical Properties Tomography Acquisitions: A Guideline From the ISMRM Electro-Magnetic Tissue Properties Study Group,” *Journal of Magnetic Resonance Imaging*, vol. 63, no. 1, pp. 279-281, Jan. 2026, [†]*Equivalent contribution*
Invited
- [J9] **Ilias I. Giannakopoulos**, José E. Cruz Serrallés, Jan Paška, Martijn A. Cloos, Ryan Brown, Riccardo Lattanzi, “Global Maxwell Tomography Using the Volume-Surface Integral Equation for Improved Estimation of Electrical Properties,” *IEEE Transactions on Biomedical Engineering*, vol. 72, no. 17, pp. 3567-3578, Dec. 2025
- [J10] Russell Luke Lagore, Alireza Sadeghi-Tarakameh, Andrea Grant, Matt Waks, Edward Auerbach, Steve Jungst, Lance DelaBarre, Steen Moeller, Yigitcan Eryaman, Riccardo Lattanzi, **Ilias I. Giannakopoulos**, Luca Vizioli, Essa Yacoub, Simon Schmidt, Gregory J Metzger, Xiaoping Wu, Gregor Adriany, Kamil Ugurbil, “A 128-channel receive array with enhanced SNR performance for 10.5 tesla brain imaging,” *Magnetic Resonance in Medicine*, 93.6 (2025): 2680-2698
Figure 9 A appeared in Nature Methods 21.11 (2024): 1975-1979
Editor’s choice
- [J11] **Ilias I. Giannakopoulos**, Giuseppe Carluccio, Mahesh B. Keerthivasan, Gregor Koerzdoerfer, Karthik Lakshmanan, Hector Lise de Moura, José E. Cruz Serrallés, Riccardo Lattanzi, “Magnetic Resonance Electrical Properties Mapping Using Vision Transformers and Canny Edge Detectors.” *Magnetic Resonance in Medicine*, 93.3 (2025): 1117-1131
Editor’s choice
- [J12] Matt Waks, Russell L. Lagore, Edward Auerbach, Andrea Grant, Alireza Sadeghi-Tarakameh, Lance DelaBarre, Steve Jungst, Nader Tavaf, Riccardo Lattanzi, **Ilias I. Giannakopoulos**, Steen Moeller, Xiaoping Wu, Essa Yacoub, Luca Vizioli, Simon Schmidt, Gregory J. Metzger, Yigitcan Eryaman, Gregor Adriany, Kamil Ugurbil, “RF Coil Design Strategies for Improving SNR at the Ultrahigh Magnetic Field of 10.5 tesla,” *Magnetic Resonance in Medicine*, 93.2 (2025): 873-888
Cover Image for Magnetic Resonance in Medicine: Volume 93, Issue 2

- [J13] **Ilias I. Giannakopoulos**, Matthew J. Muckley, Jesi Kim, Matthew Breen, Patricia M. Johnson, Yvonne W. Lui, Riccardo Lattanzi, “[Accelerated MRI Reconstructions via Variational Network and Feature Domain Learning](#),” *Sci Rep* 14, 10991 (2024)
- [J14] Bei Zhang, Jerahmie Radder, **Ilias I. Giannakopoulos**, Andrea Grant, Russell Lagore, Matt Waks, Nader Tavaf, Pierre- Francois van de Moortele, Gregor Adriany, Alireza Trakameh, Yigitcan Eryaman, Riccardo Lattanzi, Kamil Ugurbil, “[Performance of Receive Head Arrays versus Ultimate Intrinsic SNR at 7 Tesla and 10.5 Tesla](#),” *Magnetic Resonance in Medicine*, 92.3 (2024): 1219-1231
- [J15] **Ilias I. Giannakopoulos**, Ioannis P. Georgakis, Daniel K. Sodickson, Riccardo Lattanzi, “[Computational methods for the estimation of ideal current patterns in realistic human head models](#),” *Magnetic Resonance in Medicine*, 91.2 (2024): 760-772
Editor’s choice
- [J16] Xinling Yu, José E. Cruz Serrallés, **Ilias I. Giannakopoulos**, Ziyue Liu, Luca Daniel, Riccardo Lattanzi, Zheng Zhang, “[PIFON-EPT: MR-Based Electrical Property Tomography Using Physics-Informed Fourier Networks](#),” *IEEE Journal on Multiscale and Multiphysics Computational Techniques*, vol. 9, pp. 49-60, December 2023
- [J17] Georgy D. Guryev, Eugene Milstyen, **Ilias I. Giannakopoulos**, Riccardo Lattanzi, Lawrence L. Wald, Elfar Adalsteinsson, Jacob K. White, “[MARIE 2.0: A Perturbation Matrix Based Patient-Specific MRI Field Simulator](#),” *IEEE Transactions on Biomedical Engineering*, vol. 70, no. 5, pp. 1575-1586, May 2023
- [J18] **Ilias I. Giannakopoulos**, Georgy Guryev, José E. Cruz Serrallés, Jan Paška, Bei Zhang, Luca Daniel, Jacob K. White, Christopher Collins, Riccardo Lattanzi, “[A hybrid volume-surface integral equation method for rapid electromagnetic simulations in MRI](#),” *IEEE Transactions on Biomedical Engineering*, vol. 70, no. 1, pp. 105-114, Jan. 2023
- [J19] **Ilias I. Giannakopoulos**, Georgy Guryev, José E. Cruz Serrallés, Ioannis P. Georgakis, Luca Daniel, Jacob K. White, Riccardo Lattanzi, “[Compression of volume-surface integral equation matrices via Tucker decomposition for magnetic resonance applications](#),” *IEEE Transactions on Antennas and Propagation*, vol. 70, no. 1, pp. 459-471, Jan. 2022
Harold A. Wheeler Prize Paper Award
- [J20] Ioannis P. Georgakis, **Ilias I. Giannakopoulos**, Mikhail S. Litsarev and Athanasios G. Polimeridis, “[A Fast Volume Integral Equation Solver with Linear Basis Functions for the Accurate Computation of Electromagnetic Fields in MRI](#),” *IEEE Transactions on Antennas and Propagation*, vol. 69, no. 7, pp. 4020-4032, Jul. 2021
- [J21] **Ilias I. Giannakopoulos**, José E. Cruz Serrallés, Luca Daniel, Daniel K. Sodickson, Athanasios G. Polimeridis, Jacob K. White, Riccardo Lattanzi, “[Magnetic-resonance-based electrical property mapping using Global Maxwell Tomography with an 8-channel head coil at 7 Tesla: a simulation study](#),” *IEEE Transactions on Biomedical Engineering*, vol. 68, no. 1, pp. 236-246, Jan. 2021
- [J22] José E. Cruz Serrallés, **Ilias I. Giannakopoulos**, Bei Zhang, Carlotta Ianniello, Martijn A. Cloos, Athanasios G. Polimeridis, Jacob K. White, Daniel K. Sodickson, Luca Daniel, Riccardo Lattanzi, “[Noninvasive Estimation of Electrical Properties from Magnetic Resonance Measurements via Global Maxwell Tomography and Match Regularization](#),” *IEEE Transactions on Biomedical Engineering*, vol. 67, no. 1, pp. 3-15, Jan. 2020
- [J23] **Ilias I. Giannakopoulos**, Mikhail S. Litsarev and Athanasios G. Polimeridis, “[Memory footprint reduction for the FFT-based volume integral equation method via tensor decompositions](#),” *IEEE Transactions on Antennas and Propagation*, vol. 67, no. 12, pp. 7476-7486, Dec. 2019

— Publications in Indexed Conference Proceedings

- [C1] **Ilias I. Giannakopoulos**, Georgy Guryev, José E. Cruz Serrallés, Ioannis P. Georgakis, Luca Daniel, Jacob K. White, Riccardo Lattanzi, “[A tensor train compression scheme for remote volume surface integral equation interactions](#),” *2021 International Applied Computational Electromagnetics Society (ACES) Symposium*
Invited
Oral Presentation
- [C2] **Ilias I. Giannakopoulos**, José E. Cruz Serrallés, Bei Zhang, Luca Daniel, Jacob K. White, Riccardo Lattanzi, “[Global Maxwell Tomography using an 8-channel radiofrequency coil: simulation results for a tissue-mimicking phantom at 7T](#),” *2019 IEEE International Symposium on Antennas and Propagation & USNC/URSI National Radio Science Meeting*
Oral Presentation

- [C3] **Ilias I. Giannakopoulos**, Mikhail S. Litsarev and Athanasios G. Polimeridis, “3D Cross-Tucker approximation in FFT-based volume integral equations,” *2018 IEEE International Symposium on Antennas and Propagation & USNC/URSI National Radio Science Meeting*
Honorable Mention Award
Poster Presentation

— Abstracts in non-Indexed Conference Proceedings

- [A1] Alessia Pellegri, **Ilias I Giannakopoulos**, Sabrina Guastavino, Sara Garbarino, Marco Battiston, Simona Schiavi, Andrea Serra, Riccardo Lattanzi, Michele Piana, “AI-Based Accelerated Brain MRI on a Unique 0.5T Open-Bore MR System,” in *2026 ISMRM Italian Chapter, AIRMM, Under review*
- [A2] Filiz Yetisir, Neel Dey, **Ilias I Giannakopoulos**, Georgy Guryev, Esra Abaci Turk, Adi Titelman Ashkenazy, Riccardo Lattanzi, Jacob White, Polina Golland, Elfar Adalsteinsson, Patricia E. Grant, “Fetal SAR Variation Induced by Realistic Fetal Motion,” in *2026 ISMRM Annual Meeting & Exhibition, Under review*
- [A3] José E. Cruz Serrallés, **Ilias I. Giannakopoulos**, Siqi Wang, Damien Chen, Daniel Zint, Daniele Panozzo, Denis Zorin, Riccardo Lattanzi, “Fully Automated Radiofrequency Coil Array Design Optimized Against Ultimate Performance Benchmarks,” in *2026 ISMRM Annual Meeting & Exhibition, Under review*
- [A4] Alessia Pellegri, **Ilias I Giannakopoulos**, Sabrina Guastavino, Sara Garbarino, Marco Battiston, Simona Schiavi, Andrea Serra, Riccardo Lattanzi, Michele Piana, “Accelerated 0.5T brain MRI reconstructions via variational network,” in *2026 ISMRM Annual Meeting & Exhibition, Under review*
- [A5] **Ilias I Giannakopoulos**, Lokesh B Gautham Muthukumar, Yvonne W Lui, Riccardo Lattanzi, “A Trainable Uncertainty Module for Image Reconstruction Methods using Conformal Prediction,” in *2026 ISMRM Annual Meeting & Exhibition, Under review*
- [A6] **Ilias I. Giannakopoulos**, Bei Zhang, José E. Cruz Serrallés, Ryan Brown, Riccardo Lattanzi, “Open-Source Software Tools for Radiofrequency Coil Design,” in *2026 ISMRM Annual Meeting & Exhibition, Under review*
- [A7] Filiz Yetisir, Neel Dey, **Ilias I Giannakopoulos**, José E. Cruz Serrallés, Georgy Guryev, Esra Abaci Turk, Adi Titelman Ashkenazy, Riccardo Lattanzi, Jacob White, Polina Golland, Elfar Adalsteinsson, Patricia E. Grant, “Enhanced Fetal MRI Safety Assessment Through Incorporation of Realistic Fetal Motion,” in *2026 Pediatric Academic Societies Meeting, Under review*
- [A8] **Ilias I Giannakopoulos**[†], Lokesh B Gautham Muthukumar[†], Yvonne W Lui, Riccardo Lattanzi “Pixel-Wise Uncertainty Estimation of Accelerated MR Image Reconstruction Using Conformal Quantile Regression,” in *2026 ISMRM Workshop on Data Sampling & Image Reconstruction*, [†]*Equivalent contribution*
Oral Presentation
- [A9] Filiz Yetisir, Neel Day, **Ilias I. Giannakopoulos**, Georgy Guryev, Esra Abaci Turk, Adi Titelman Ashkenazy, Riccardo Lattanzi, Jacob White, Polina Golland, Elfar Adalsteinsson, Patricia Ellen Grant, “Effect of realistic fetal motion of fetal SAR,” in *2025 ISMRM Workshop on MR Safety: From Science to Clinical Practice*
- [A10] José E. Cruz Serrallés[†], **Ilias I. Giannakopoulos**[†], Siqi Wang[†], Damien Chen, Xin Zhao, Daniel Zint, Daniele Panozzo, Denis Zorin, Riccardo Lattanzi, “A fully automatic pipeline to optimize radiofrequency coil design using the ultimate intrinsic signal-to-noise ratio as the benchmark,” in *2025 ISMRM Annual Meeting & Exhibition*. [†]*Equivalent contribution*
- [A11] Anais Artiges, Amanpreet Singh Saimbhi, Carlos Castillo-Passi, Eros Montin, **Ilias I. Giannakopoulos**, Riccardo Lattanzi, Kai Tobias Block, “Open-source pulse sequences: conversion from mtrk to Pulseq and comparison with vendor sequence in simulation, phantom, and in vivo,” in *2025 ISMRM Annual Meeting & Exhibition*.
Magna Cum Laude Merit Award
- [A12] Eros Montin, José E. Cruz Serrallés, **Ilias I. Giannakopoulos**, Anais Artiges, Carlos Castillo-Passi, Riccardo Lattanzi, “A modular end-to-end open-source software pipeline to simulate the entire MRI experiment,” in *2025 ISMRM Annual Meeting & Exhibition*
- [A13] Stefano Mandija, Alessandro Arduino, Cornelis A. T. van den Berg, Patrick Fuchs, **Ilias I. Giannakopoulos**, Yusuf Ziya Ider, Kyu-Jin Jung, Ulrich Katscher, Dong-Hyun Kim, Riccardo Lattanzi, Thierry G. Meerbothe, Khin Khin Tha, and Luca Zilberti, “First MR Electrical Properties Tomography reconstruction challenge: phase 3 - conductivity reconstructions from measured data,” in *2025 ISMRM Annual Meeting & Exhibition*

- [A14] **Ilias I. Giannakopoulos**, Riccardo Lattanzi, “In vivo brain electrical property mapping using vision transformers and magnetic resonance measurements,” in *2025 National Radio Science Meeting*
Invited
Oral Presentation
- [A15] Alireza Sadeghi-Tarakameh, Andrea Grant, **Ilias I. Giannakopoulos**, Matt Waks, Russell L. Lagore, Lance DelaBarre, Edward Auerbach, Riccardo Lattanzi, Gregor Adriany, Kamil Ugurbil, Yigitcan Eryaman, “Capturing Central uiSNR at Ultrahigh Field: Number and Size of the Receive Elements Matter,” in *2024 ISMRM Annual Meeting & Exhibition*
Magna Cum Laude Merit Award
- [A16] Gonzalo Rodriguez, Hector Lise de Moura, **Ilias I. Giannakopoulos**, Riccardo Lattanzi, Ravinder Regatte, and Guillaume Madelin, “Super-resolution Y-Net for simultaneous ^1H MR/ ^{23}Na MRI,” in *2024 ISMRM Annual Meeting & Exhibition*
- [A17] José E. Cruz Serrallés, **Ilias I. Giannakopoulos**, and Riccardo Lattanzi, “On the Extension of MARIE to Low Frequencies and Arbitrarily Fine Meshes,” in *2024 ISMRM Annual Meeting & Exhibition*
- [A18] **Ilias I. Giannakopoulos**, Xinling Yu, Giuseppe Carluccio, Gregor Koerzdoerfer, Karthik Lakshmanan, Hector Lise de Moura, José E. Cruz Serrallés, Jerzy Walczyk, Zheng Zhang, and Riccardo Lattanzi, “Electrical Property Mapping using Vision Transformers and Canny Edge Detection,” in *2024 ISMRM Annual Meeting & Exhibition*.
Finalist submission in the ISMRM-EMTP study group
Magna Cum Laude Merit Award
Oral Presentation
- [A19] Stefano Mandija, Alessandro Arduino, Cornelis A.T. van den Berg, Patrick Fuchs, **Ilias I. Giannakopoulos**, Yusuf Ziya Ider, Kyu-Jin Jung, Ulrich Katscher, Dong-Hyun Kim, Riccardo Lattanzi, Thierry G. Meerbothe, Khin-Khin Tha, and Luca Zilberti, “The first MR Electrical Properties Tomography (MR-EPT) reconstruction challenge: preliminary results of simulated data,” in *2024 ISMRM Annual Meeting & Exhibition*
AMPC selected abstract
- [A20] **Ilias I. Giannakopoulos**, Patricia Johnson, Jesi Kim, Matthew Breen, Yvonne Lui, and Riccardo Lattanzi, “Feature-Image Variational Network for Accelerated MRI Reconstructions,” in *2024 ISMRM Annual Meeting & Exhibition*
Poster Presentation
- [A21] Bei Zhang, **Ilias I. Giannakopoulos**, Gregor Adriany, Kamil Ugurbil, Riccardo Lattanzi, “Performance Evaluation of 63-channel and 31-channel head arrays at 7T and 10.5T with uiSNR,” in *2023 i2i Workshop*
- [A22] **Ilias I. Giannakopoulos**, Riccardo Lattanzi, “Using Tucker-Compressed Volume Integral Equation Methods to Accelerate the Estimation of Ideal Current Patterns in MRI,” *2023 IEEE MTT-S NEMO’2023*
Invited
Oral Presentation
- [A23] **Ilias I. Giannakopoulos**, Patricia Johnson, Riccardo Lattanzi, Matthew Muckley, “Improving variational network based 2D MRI reconstruction via feature-space data consistency,” *2023 ISMRM Workshop on Data Sampling & Image Reconstruction*.
Poster Presentation
- [A24] José E. Cruz Serrallés, **Ilias I. Giannakopoulos**, Georgy Guryev, Luca Daniel, Riccardo Lattanzi, “Simultaneous Estimation of Electrical Properties and Incident Fields Using Global Maxwell Tomography with B_1^+ and MR Signal Data,” *2023 ISMRM Annual Meeting & Exhibition*
Poster Presentation
- [A25] Xinling Yu, José E. Cruz Serrallés, **Ilias I. Giannakopoulos**, Ziyue Liu, Luca Daniel, Riccardo Lattanzi, Zheng Zhang, “PIFN EPT: MR-Based Electrical Property Tomography Using Physics-Informed Fourier Networks,” *2023 ISMRM Annual Meeting & Exhibition*
Poster Presentation
- [A26] **Ilias I. Giannakopoulos**, Patricia Johnson, Riccardo Lattanzi, Matthew Muckley, “Improving variational network based 2D MRI reconstruction via feature-space data consistency,” *2023 ISMRM Annual Meeting & Exhibition*
Educational Stipend Award
Poster Presentation

- [A27] **Ilias I. Giannakopoulos**, Matthew Muckley, Patricia Johnson, Riccardo Lattanzi, “Accelerated MRI reconstructions using a variational network with general conditioning layers,” in *11th Annual BMEII Symposium*, Icahn School of Medicine at Mount Sinai, April 2023
Poster Presentation
- [A28] Xinling Yu, José E. Cruz Serrallés, **Ilias I. Giannakopoulos**, Ziyue Liu, Luca Daniel, Riccardo Lattanzi, Zheng Zhang, “MR-Based Electrical Property Reconstruction Using Physics-Informed Neural Networks,” in *2022 Joint Workshop on MR phase, magnetic susceptibility and electrical properties mapping*
Oral Presentation
- [A29] José E. Cruz Serrallés, **Ilias I. Giannakopoulos**, Luca Daniel, Riccardo Lattanzi, “Replacing the Coil Model with a Numerical Electromagnetic Basis in Global Maxwell Tomography: Preliminary Experimental Results,” in *2022 Joint Workshop on MR phase, magnetic susceptibility and electrical properties mapping*
- [A30] **Ilias I. Giannakopoulos**, José E. Cruz Serrallés, Luca Daniel, Riccardo Lattanzi, “Effect of the Coil’s Incident Field Accuracy on Global Maxwell Tomography,” in *2022 Joint Workshop on MR phase, magnetic susceptibility and electrical properties mapping*
Power Pitch
Poster Presentation
- [A31] Georgy Guryev, Eugene Milshteyn, **Ilias I. Giannakopoulos**, Elfar Adalsteinsson, Lawrence L. Wald, Jacob K. White, “Fast full-wave patient-specific field simulations in seconds with MARIE 2.0,” *2022 ISMRM Annual Meeting & Exhibition*
- [A32] **Ilias I. Giannakopoulos**, José E. Cruz Serrallés, Jan Paška, Carlotta Ianniello, Georgy Guryev, Luca Daniel, Jacob K. White, Ryan Brown, Daniel K. Sodickson, Riccardo Lattanzi, “A Novel Volume-Surface Integral Equation Formulation of Global Maxwell Tomography: Simulations and Experiments,” *2022 ISMRM Annual Meeting & Exhibition*
Finalist submission in the ISMRM-EMTP study group
Educational Stipend Award
Poster Presentation
- [A33] **Ilias I. Giannakopoulos**, Georgy Guryev, José E. Cruz Serrallés, Jan Paška, Bei Zhang, Luca Daniel, Jacob K. White, Christopher Collins, Riccardo Lattanzi, “Hybrid volume-surface integral equation method for rapid electromagnetic simulations in ultra-high-field MRI,” *2022 ISMRM Workshop on Ultra-High Field MR*
Educational Stipend Award
Poster Presentation
- [A34] José E. Cruz Serrallés, **Ilias I. Giannakopoulos**, Jacob K. White, Luca Daniel, Riccardo Lattanzi, “An Application of a Projected Newton Method to Electrical Properties Estimation via Global Maxwell Tomography,” *2021 ISMRM Annual Meeting & Exhibition*
- [A35] **Ilias I. Giannakopoulos**, Georgy Guryev, José E. Cruz Serrallés, Ioannis P. Georgakis, Luca Daniel, Jacob K. White, Riccardo Lattanzi, “Decomposition of the incomplete volume-surface integral equation matrices for MR coil simulations,” *2021 ISMRM Annual Meeting & Exhibition*
Educational Stipend Award
Poster Presentation
- [A36] **Ilias I. Giannakopoulos**, José E. Cruz Serrallés, Georgy Guryev, Luca Daniel, Elfar Adalsteinsson, Lawrence Wald, Daniel Sodickson, Jacob White, Riccardo Lattanzi, “On the usage of deep neural networks as a tensor-to-tensor translation between MR measurements and electrical properties,” *2020 ISMRM Virtual Conference & Exhibition*
Poster Presentation
- [A37] **Ilias I. Giannakopoulos**, José E. Cruz Serrallés, Bei Zhang, Luca Daniel, Jacob K. White, Riccardo Lattanzi, “Electrical properties mapping in a tissue mimicking phantom using Global Maxwell Tomography with a realistic coil model at 7 Tesla,” in *2nd International workshop of Mr-based Electrical Properties mapping (IMEP)*, 2019
Oral Presentation
- [A38] **Ilias I. Giannakopoulos**, Ioannis P. Georgakis, Mikhail S. Litsarev and Athanasios G. Polimeridis, “A GPU-accelerated and highly accurate VIE solver for dielectric shimming in MRI via tensor decompositions,” *3rd Annual Skoltech-MIT Conference*, “Collaborative Solutions for Next Generation Education, Science and Technology,” October 2018
Poster Presentation

[S1] **Ilias I Giannakopoulos**, Lokesh B Gautham Muthukumar, Yvonne W Lui, Riccardo Lattanzi “Pixel-Wise Uncertainty Estimation of Accelerated MR Image Reconstruction Using Conformal Quantile Regression,” *III CBI Science Day*, Department of Radiology, NYU Grossman School of Medicine, February 2026
Format Pending

[S2] **Ilias I. Giannakopoulos**, Giuseppe Carluccio, Mahesh B. Keerthivasan, Gregor Koerzdoerfer, Karthik Lakshmanan, Hector Lise de Moura, José E. Cruz Serrallés, Riccardo Lattanzi, “MR-Based Electrical Properties Mapping Using Vision Transformers and Canny Edge Detectors,” *II CBI Science Day*, Department of Radiology, NYU Grossman School of Medicine, October 2024
Oral Presentation

[S3] **Ilias I. Giannakopoulos**, Matthew J. Muckley, Patricia M. Johnson and Riccardo Lattanzi, “Advancing accelerated MRI reconstructions through novel variational network-based architectures,” *CBI Science Day*, Department of Radiology, NYU Grossman School of Medicine, May 2023
Poster Presentation

— Open-Source Software

[O1] MARIE 3.0 

[O2] 3D Vision Transformer for MR Electrical Properties Tomography 

[O3] FI and Feature VarNets for Accelerated MRI Reconstructions 

[O4] Mie Scattering for Homogeneous Spheres 

— Public Datasets

[D1] Synthetic Phantoms Dataset for MR Electrical Properties Tomography 

Professional Service and Affiliations

— Reviewing

Grant Applications

02/2023–now *Dutch Research Council-Open Technology Programme*

Journal Articles

12/2025–now *The Journal of Open Source Software*

12/2024–now *American Journal of Neuroradiology*

12/2024–now *Magnetic Resonance in Medicine*

09/2024–now *Journal of Magnetic Resonance Imaging*

07/2023–now *Frontiers in Immunology*

06/2023–now *Human Brain Mapping*

01/2023–now *Multidisciplinary Digital Publishing Institute*

Conferences & Workshop Abstracts

01/2024–now *International Society for Magnetic Resonance in Medicine Annual Meeting*

07/2024 *EMTP Chile - Joint Workshop on MR Phase, Magnetic Susceptibility and EP Mapping*

Professional Membership & Awards

2025–now *IEEE Senior Member Applications*

— Professional Memberships

International Society for Magnetic Resonance in Medicine (ISMRM)

05/2025–05/2035 *Junior Fellow*

11/2019–05/2026 *Trainee Member*

05/2025–05/2027 *Member, ISMRM Chapters Committee*

10/2025–now *Member, Artificial Intelligence & Machine Learning (AI/ML) Study Group*

11/2019–now *Member, Electro-Magnetic Tissue Properties Study Group*

11/2019–now *Member, Ultra-High Field MR Study Group*

Institute of Electrical and Electronics Engineers (IEEE)

10/2025–now *Senior Member*

03/2025–10/2025 *Member*

01/2014–12/2016 *Student Member*

01/2026–now *Member, Engineering in Medicine and Biology Society*

03/2025–now *Member, Antennas and Propagation Society*

— Activities

Invited talk organization

09/2025–now Radiology Research Forum and Vilcek Seminars in Biomedical Imaging, Department of Radiology, NYU Grossman School of Medicine, New York, NY, USA. Dr. Tsui-Wei (Lily) Weng, *Toward Principled and Automated Interpretability in Neural Networks*

Scientific Committee Member

09/2024 [EMTP Chile](#), 2024 Joint Workshop on MR Phase, Magnetic Susceptibility and Electrical Properties Mapping

Organizing Committee

02/2023–08/2023 [First MR-EPT reconstruction challenge](#)

03/2014–06/2014 [Quantum Mechanics Student Symposium, AuTh](#)

Other

Media Exposure

05/2025 **Spotlight:** “[Santiago Coelho and Ilias Giannakopoulos Named Junior Fellows of the ISMRM](#)”, *Center of Advanced Imaging and Innovation and Research (CA²R) Honor Roll and Lab Notebook blogs*, New York, NY, USA

07/2023 **Interview:** “[Ilias Giannakopoulos on Matrices, Electromagnetics, and Role Models](#)”, *Center of Advanced Imaging and Innovation and Research (CA²R) Honor Roll and Lab Talk blogs*, New York, NY, USA

09/2018 **Spotlight:** [fourtounis.gr](#), Greece

03/2018 **Interview:** “Why did I choose Skoltech?”, *Troickuy variant-Nauka*, Workshop of the Future column, vol. 254, no. 10, pp. 7, Moscow, Russian Federation

Volunteering

10/2023 I2I Workshop, NYU Langone Health, New York, NY, USA.

03/2021–now Research MRI Scans at NYU Langone Health, New York, NY, USA.

01/2013–01/2014 Moderator, [THMMY.gr](#).

Languages

Greek Native speaker.

English Fully proficient, IELTS (2011), ECCE, University of Michigan (2006).

French Working knowledge, DELF B1/A2/A1.