Alexandra G. Roberts, M.S.

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Employment History

2017 - 2020	▌	**Research Engineer** Benz Research & Development, Sarasota, FL
2014 – 2015	▌	**Corps Member** Teach For America, New York, NY

Education

2020	▌	**Doctor of Philosophy, Cornell University** Electrical & Computer Engineering
2016 - 2020	▌	**Master of Engineering, University of Florida** Chemical Engineering *3D reconstruction algorithms for X-ray tomography of printed circuit board samples*
2010 - 2014	▌	**Bachelor of Science, West Virginia Wesleyan College** Chemistry *Summa Cum Laude, WV-INBRE Researcher*

Personal

Licensed amateur radio operator (KC0AGR), marathon runner, and guitarist.

Research Publications

Journal Articles

1. A. G. Roberts, D. Romano, M. Şişman, *et al.*, "Maximum spherical mean value filtering for whole-brain QSM," *Magnetic Resonance in Medicine*, vol. 91, no. 4, pp. 1586–1597, Jan. 2024, ISSN: 1522-2594. 🔗 DOI: 10.1002/mrm.29963.

2. A. G. Roberts, J. Zhang, C. Tozlu, *et al.*, "Radiomic prediction of Parkinson's disease deep brain stimulation surgery outcomes using quantitative susceptibility mapping and label noise compensation," *Neuromodec Journal*, Oct. 2024, ISSN: 2996-8801. 🔗 DOI: 10.31641/nmj-ogms6387.

3. A. V. Dimov, J. Li, T. D. Nguyen, *et al.*, "QSM throughout the body," *Journal of Magnetic Resonance Imaging*, vol. 57, no. 6, pp. 1621–1640, 2023. 🔗 DOI: 10.1002/jmri.28624.

4. N. Jessurun, O. Paradis, A. Roberts, and N. Asadizanjani, "Component detection and evaluation framework (CDEF): A semantic annotation tool," *Microscopy and Microanalysis*, vol. 26, no. S2, pp. 1470–1474, 2020.

Conference Proceedings

1. A. G. Roberts, J. Zhang, P. Spincemaille, T. Nguyen, and Y. Wang, "Radiomic prediction of Parkinson's disease deep brain stimulation surgery motor and nonmotor outcomes using quantitative susceptibility mapping," in *Magnetic Resonance Phase, Susceptibility, and Electrical Properties Mapping*, 2024.

2. A. G. Roberts, A. Dimov, T. Nguyen, P. Spincemaille, and Y. Wang, "Inhomogeneity-informed field-fitting for quantitative susceptibility mapping (if-QSM)," in *Proceedings of the 33rd Annual Meeting of ISMRM, Singapore*, 2024.

3. A. G. Roberts, M. Sisman, A. Dimov, *et al.*, "Whole brain source separation for neurodegeneration," in *Proceedings of the 33rd Annual Meeting of ISMRM, Singapore*, 2024.

4. A. G. Roberts, J. Zhang, H. Kim, *et al.*, "Radiomics for deep brain stimulation outcome prediction using quantitative susceptibility mapping (RadDBS-QSM)," in *Proceedings of the 33rd Annual Meeting of ISMRM, Singapore*, 2024.

5. A. G. Roberts, J. Zhang, D. Romano, *et al.*, "QRadAR: A toolbox for quantitative magnetic resonance radiomics analysis and reliability," in *Proceedings of the 33rd Annual Meeting of ISMRM, Singapore*, 2024.

6. A. Roberts, P. Spincemaille, T. Nguyen, and Y. Wang, "Whole brain spherical mean value filtering for shadow reduction in quantitative susceptibility mapping," in *Proceedings of the 32nd Annual Meeting of ISMRM, Toronto, Canada*, 2023.

7. A. G. Roberts, I. Kovanlikaya, B. Kopell, P. Spincemaille, T. Nguyen, and Y. Wang, "Improved visualization of the medial medullary lamina via phase priors in quantitative susceptibility mapping," in *Proceedings of the 32nd Annual Meeting of ISMRM, Toronto, Canada*, 2023.

8. A. G. Roberts, J. Zhang, P. Spincemaille, T. Nguyen, and Y. Wang, "Choice of architecture in 3d super-resolution of quantitative susceptibility maps," in *Proceedings of the 32nd Annual Meeting of ISMRM, Toronto, Canada*, 2023.

9. A. Roberts, P. Spincemaille, I. Kovanlikaya, J. A. Tsiouris, T. Nguyen, and Y. Wang, "SWISeR: Multi-field susceptibility-weighted images super-resolution," in *Proceedings of the 31st Annual Meeting of ISMRM, London, England*, 2022.

10. A. G. Roberts, J. Zhang, P. Spincemaille, T. Nguyen, and Y. Wang, "SuperQ: 3d super-resolution of quantitative susceptibility maps," in *Proceedings of Magnetic Resonance Phase, Susceptibility, and Electrical Properties Mapping*, 2022.

11. A. G. Roberts, P. Spincemaille, T. Nguyen, I. Kovanlikaya, and Y. Wang, "MEDI-FM: Field map error guided regularization for shadow reduction in quantitative susceptibility mapping," in *Proceedings of the 31st Annual Meeting of ISMRM, London, England*, 2022.

12. A. Roberts, P. Spincemaille, T. D. Nguyen, and Y. Wang, "MEDI-d: Downsampled morphological priors for shadow reduction in quantitative susceptibility mapping," in *Proceeedings of the 30th Annual Meeting of ISMRM*, 2021.

13. A. Roberts, J. True, N. T. Jessurun, and D. N. Asadizanjani, "An overview of 3d X-Ray reconstruction algorithms for PCB inspection," in *ISTFA 2020: 46th International Symposium for Testing and Failure Analysis*, ASM International, Dec. 2020. 🔗 DOI: 10.31399/asm.cp.istfa2020p0188.

14. A. Roberts, D. Russell, and B. Anthony, "Systems genomics in alcohol exposed dorsal root ganglia neuronal stem cells of adult rats," in *Proceedings of the West Virginia Academy of Sciences*, 2014.

References

Available on request