

Abhejit Rajagopal

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Research Summary

I'm a Postdoctoral Fellow at UCSF with the vision of building affordable, high-resolution, point-of-care medical imaging. At UCSF, I have used my expertise in **machine learning**, **computational imaging**, and **inverse problems**, to develop advanced and novel PET/MRI reconstruction and multi-modal classification algorithms that improve computer-aided diagnosis and treatment planning for several human pathologies and cancers in the prostate, kidneys, and neck.

As an Assistant Professor, my lab will develop machine learning algorithms to improve patient imaging, diagnostics, and treatment, with an immediate focus on: (1) dynamic PET/MRI and ultrasound imaging, (2) image-based cancer diagnosis and targeted treatment planning, and (3) robust neural network-based classification and analysis with guarantees.

Prior to joining UCSF, I was a Principal Investigator at Toyon Research, where I pioneered deep learning for image reconstruction and recognition of objects and terrain in a variety of sensor systems, including satellite, airborne, and ground-based EO/IR, LiDAR, and SAR imaging systems. These endeavors continue to provide inspiration for my work.

During my PhD, I developed a new framework for designing image reconstruction and recognition algorithms based on polynomial programs: "Deep Algorithms". Theoretically, these networks have robust performance even under severe over-parameterization by exploiting a low-dimensional compositional representation of a target function. In follow-on work, I am using these insights to build novel methods to visualize and quantify generalization properties of DNNs.

Education

- 2019 Ph.D. Electrical & Computer Engineering, University of California, Santa Barbara
Thesis: "High-Dimensional Polynomial Approximation with Applications in Imaging and Recognition"
- 2016 M.S. Electrical & Computer Engineering, University of California, Santa Barbara
- 2014 B.S. Electrical Engineering, University of California, Los Angeles

Honors and Awards

- 07.2021 **Best Long Oral Presentation Award**, Medical Imaging with Deep Learning (MIDL) 2021
- 07.2020 **NIH F32 Postdoctoral Fellowship**, National Institute of Biomedical Imaging and Bioengineering (NIBIB)
- 05.2019 **ECE Dissertation Fellowship**, UC Santa Barbara
- 05.2018 **Outstanding ECE Teaching Assistant Award**, UC Santa Barbara
- 02.2018 **Best Poster Award**, Physics of Medical Imaging, SPIE-MI 2018
- 10.2017 **AfterCollege Engineering & Technology Student Scholarship**
- 06.2017 **Best Poster Award**, UC Bioengineering Symposium 2017
- 06.2014 **ASEI Graduate Fellowship**

Current Appointments

- 10.2019— **Postdoctoral Fellow**, Advanced Imaging Technologies Group, University of California, San Francisco
Advised by: Dr. Peder E.Z. Larson and Dr. Thomas A. Hope
 - ⊙ Joint reconstruction of 3D PET/MRI using physics-based deep learning.
 - ⊙ Deep learning-based 3D prostate cancer grading from mpMRI and PET.
 - ⊙ Understanding and quantifying generalization in deep learning.
- 08.2021— **Staff Research Associate (WOC)**, San Francisco Veterans Affairs Medical Center, San Francisco, California
 - ⊙ Collaboration between UCSF and SFVAMC to predict applicability of deep learning algorithms.
- 12.2015— **Senior Analyst**, ISR Algorithms Group, Toyon Research Corporation, Goleta, California
 - ⊙ R&D of new signal analysis and learning paradigms for EO/IR, LiDAR, and SAR.
 - ⊙ Principle investigator and program manager on several DoD contracts (AFRL, SOCOM, Navy, SCO).
- 09.2021— **Consultant / Director of Imaging**, Ziteo Medical, Pleasant Hill, California
 - ⊙ Directing strategic R&D for portable point-of-care nuclear/molecular imaging
 - ⊙ Developing next generation 3D SPECT-ultrasound image reconstruction algorithms

Research Funding

- 09.2021 – \$750K *Principal Investigator, DoD/SBIR Direct-to-Phase II: AF212-D007, F2D-3301-“3D EO/SAR Reconstructions from Single and Limited Viewing Perspectives”*
- 08.2021 – \$50K *Principal Investigator, Pilot Project, Benioff Initiative for Prostate Cancer Research, “AI-assisted Targeted Prostate Radiotherapy” (Co-PI with J. Scholey, UCSF)*
- 12.2020 – \$139K *Principal Investigator, NIH/NIBIB F32 Postdoctoral Fellowship, F32EB030411-01 “Multi-modal and Extreme PET/MRI Reconstruction Methods”*
- 08.2020 – — *Principal Investigator, DoD/STTR Phase I: M20A-001-0014, Recommended for Award “Generalization Bounds in Deep Learning”*
- 12.2018–06.2019 \$225K *Principal Investigator, DoD/SBIR Phase I: OSD161-138, HQ0034-19-P-0017 “Maritime Target Classification from Inverse Synthetic Aperture Radar (ISAR) Using Machine Learning”*
- 10.2018–04.2019 \$125K *Principal Investigator, DoD/SBIR Phase I: N161-138, N68335-19-C-0109 “Blending Classical Model-Based Target Classification and Identification Approaches with Data-Driven Artificial Intelligence”*
- 11.2017–02.2020 \$750K *Principal Investigator, DoD/SBIR Phase II: AF161-138, FA8650-18-C-1137 “Cognitive Processing and Exploitation of 3D Laser Imaging Detection and Ranging (LIDAR) Imagery Data”*

Prior Academic Experience

- 06.2015–09.2019 **Graduate Student Researcher**, Scientific Computing Group, University of California, Santa Barbara.
Advised by: Dr. Shivkumar Chandrasekaran;
- ⊙ Design of numerical algorithms for neural information processing and imaging systems.
 - ⊙ Thesis: “*High-Dimensional Polynomial Approximation with Applications in Imaging and Recognition*”
- 09.2014–12.2017 **Teaching Assistant**, Dept. of Electrical & Computer Engineering, University of California, Santa Barbara
- ⊙ ECE 2a - Circuits, Devices, and Systems (Fall 14) – w/ Prof. H. Lee
 - ⊙ ECE 137a - Circuits and Electronics I (Winter 15) – w/ Prof. M. Rodwell
 - ⊙ ECE 137b - Circuits and Electronics II (Spring 15) – w/ Prof. M. Rodwell
 - ⊙ ECE 130a - Signal Analysis & Processing I (Fall 15) – w/ Prof. H. Lee
 - ⊙ ECE 130b - Signal Analysis & Processing II (Winter 16) – w/ Prof. S. Chandrasekaran
 - ⊙ ECE 130c - Signal Analysis & Processing III (Spring 16, 17) – w/ Prof. S. Chandrasekaran
 - ⊙ ECE 134 - Introduction to Fields and Waves (Fall 17) – w/ Prof. B. York
 - ⊙ ECE 210a - Matrix Analysis (grader–Fall 15) – w/ Prof. S. Chandrasekaran
 - ⊙ ECE 259a - Digital Speech Processing (grader–Winter 16, 17) – w/ Prof. L. Rabiner
 - ⊙ ECE 258a - Advanced Digital Signal Processing (grader–Winter 17) – w/ Prof. M. Liebling
- 08.2014–06.2015 **Collaborator**, Staba Lab, Department of Neurology, University of California, Los Angeles
Advised by: Dr. Shennan Weiss, Dr. Richard Staba
- ⊙ Design and numerical optimization of epilepsy detection algorithms that process intracranial EEG to identify interictal discharges and coherent high-frequency neural oscillations.
- 04.2013–08.2014 **Research Assistant**, Neurovascular Imaging Core, University of California, Los Angeles
Advised by: Dr. Fabien Scalzo
- ⊙ Discrimination and estimation of intracranial pressure (ICP) signals via manifold learning.
- 04.2013–06.2014 **Research Assistant**, Integrated Nanomaterials Core Lab, University of California, Los Angeles
Advised by: Dr. Diana L. Huffaker
- ⊙ Optical and electrical simulation of sub-wavelength nanostructures. Development of tools for characterization and design of 3D III-V nanowire solar cells, APDs, and modulators.
- 05.2008–05.2010 **Research Volunteer**, Collins Lab, University of California, Irvine
Advised by: Dr. Philip G. Collins
- ⊙ Investigated electronic properties of single-walled carbon nanotubes in FETs using AFM and SEM microscopy, E-beam lithography, and Raman spectroscopy.

Prior Professional Experience

- 06.2015–10.2015 **Research Intern**, Akela Inc., Goleta, California.
 ☉ R&D in radar signal processing, EM simulation, antenna design, and VNA calibration.
- 12.2014–12.2015 **Consultant**, Neural Analytics Inc., Los Angeles, California.
 ☉ Signal processing, machine learning, and QA for traumatic brain injury (TBI) detection and prognosis using ICP, TCD and other measurements of CBFV.
- 04.2012–03.2013 **Intern, Hardware Testing**, Broadcom Corporation, Irvine, California.
 ☉ Test and debug of reference designs in HWDSL group. Automated DSL/WiFi throughput testing, designed a temperature feedback controller for PVT, developed drivers and tools.
- 06.2011–09.2011 **Intern**, HDA Technology, Irvine, California.
 ☉ Development of network infrastructure tools and CentOS/Windows server administration

Journal Papers

- [in submission] A. Rajagopal, K. Magudia, T.A. Hope, A. Westphalen, P.E.Z. Larson, “Mixed-supervision for improving prostate cancer detection and localization from 3D MRI”, Nov 2021. (For submission at *IEEE TMI*, [Manuscript available!](#))
- [under review] A. Rajagopal, V.C Madala, T.A. Hope, P.E.Z. Larson, “Predicting Generalization of CNNs Without Labels”, Nov 2021. (Under review at *Nature Machine Intelligence*, [Manuscript available!](#))
- [under review] J. Scholey, A. Rajagopal, E. Vasquez, A. Sudhyadhom, P.E.Z. Larson, “Generation of synthetic megavoltage CT for MRI-only radiotherapy treatment planning using a 3D deep convolutional neural network”, Nov 2021. (Under review at *Medical Physics*, [Manuscript available!](#))
- [under review] A. Rajagopal, Y. Natsuaki, K. Wangerin, M. Hamdi, R. Laforest, H. An, P.E. Kinahan, J.J. Sunderland, T.A. Hope, P.E.Z. Larson, “Synthetic PET via Domain Translation of 3D MRI”, Oct 2021. (Under review at *IEEE TMI*, [Manuscript available!](#))
- [under review] Y. Natsuaki, A.P. Leynes, K. Wangerin, M. Hamdi, A. Rajagopal, P.E. Kinahan, R. Laforest, P.E.Z. Larson, T.A. Hope, S. St. James, “Lesion Insertion Tool to Assess PET-MR Attenuation Correction Methods: Matched Contralateral and Localized Uptake Lesion Insertions in Pelvis PET-MR Data”, Jan 2021. ([Manuscript available upon request](#))
- J6. R. Laforest, M. Khaligi, Y. Natsuaki, A. Rajagopal, D. Chandramohan, D. Byrd, H. An, P.E.Z. Larson, S.S. James, J.J. Sunderland, P.E. Kinahan, T.A. Hope, “Harmonization of PET image Reconstruction HyperParameters in Simultaneous PET/MRI”, *accepted with minor revision at EJNMMI Physics*, Sep 2020. DOI: [10.21203/rs.3.rs-29815/v2](https://doi.org/10.21203/rs.3.rs-29815/v2)
- J5. C. Ciprian, R. Laforest, . . . , A. Rajagopal, . . . , T.A. Hope, “A Path to Qualification of PET/MR Scanners for Multicenter Brain Imaging Studies: Evaluation of MR-based Attenuation Correction Methods Using a Patient Phantom”, *Journal of Nuclear Medicine*, Jul 2021. DOI: [10.2967/jnumed.120.261881](https://doi.org/10.2967/jnumed.120.261881)
- J4. A. Rajagopal, V.R. Radzicki, H. Lee, and S. Chandrasekaran, “Nonlinear electrocardiographic imaging using polynomial approximation networks”, *APL Bioengineering*, Oct 2018. DOI: [10.1063/1.5038046](https://doi.org/10.1063/1.5038046)
- J3. S. Chandrasekaran and A. Rajagopal, “Fast indefinite multi-point clustering”, *Calcolo*, Apr 2016. DOI: [10.1007/s10092-016-0191-2](https://doi.org/10.1007/s10092-016-0191-2)
- J2. A. Rajagopal, R. Hamilton, and F. Scalzo, “Noise reduction in intracranial pressure signal using causal shape manifolds”, *Biomedical Signal Processing and Control*, Mar 2016. DOI: [10.1016/j.bspc.2016.03.003](https://doi.org/10.1016/j.bspc.2016.03.003)
- J1. A. Farrell, P. Senanayake, CH. Hung, G. El-howayek, A. Rajagopal, M. Currie, M. Hayat, and D.L. Huffaker, “Plasmonic field confinement for separate absorption-multiplication in InGaAs nanopillar avalanche photodiodes”, *Scientific Reports*, Dec 2015. DOI: [10.1038/srep17580](https://doi.org/10.1038/srep17580)

Peer-reviewed Conference Papers

- [under review] D. Dangwal, A. Rajagopal, A.G. Glova, R. Gretsche, P. Jain, J. Balkind, T. Sherwood, “A Privacy-Optimizing Streaming Data Architecture”, Nov 2021. (Under review at *IEEE/ACM ISCA 22*, [Manuscript available!](#))
- C10. A. Rajagopal, V.C Madala, T.A. Hope, P.E.Z. Larson, “Understanding and Visualizing Generalization in UNets”, *Medical Imaging with Deep Learning (MIDL)*, July 2021. (**Best Long Oral Presentation Award**) [PMLR 143:665-681](https://arxiv.org/abs/2107.08111)
- C9. A. Rajagopal, N. Dwork, T.A. Hope, and P.E.Z. Larson, “Enhanced PET/MRI Reconstruction via Dichromatic Interpolation of Domain-Translated Zero-Dose PET”, *SPIE Medical Imaging: Physics of Medical Imaging*, Feb 2021. DOI: [10.1117/12.2580915](https://doi.org/10.1117/12.2580915)

- C8. [A. Rajagopal](#), W. Nelson, N. Stier, S. Chandrasekaran, and A.P. Brown, "DeepOSM-3D: recognition in aerial LiDAR RGBD imagery", *SPIE Defense and Commercial Sensing: Geospatial Informatics*, Apr 2020. DOI: [10.1117/12.2565585](#)
- C7. V.R. Radzicki, [A. Rajagopal](#), H. Lee, "Remote Heart Monitoring via Medical Telemetry", *International Telemetry Conference (ITC)*, Oct 2019. ISSN: [0884-5123](#); [0074-9079](#)
- C6. [A. Rajagopal](#), N. Stier, J. Dey, M.A. King, and S. Chandrasekaran, "Towards deep iterative-reconstruction algorithms for computed tomography (CT/SPECT) applications", *SPIE Medical Imaging: Physics of Medical Imaging*, Feb 2019. DOI: [10.1117/12.2513005](#)
- C5. S. Chandrasekaran, N. Govindarajan, and [A. Rajagopal](#), "Fast Algorithms for Displacement and Low-Rank Structured Matrices", 2018 *ACM International Symposium on Symbolic and Algebraic Computation (ISSAC)*, Jul 2018. DOI: [10.1145/3208976.3209025](#)
- C4. [A. Rajagopal](#), V.R. Radzicki, H. Lee, and S. Chandrasekaran, "Towards non-invasive electrocardiographic imaging using regularized neural networks", *SPIE Medical Imaging: Physics of Medical Imaging*, Feb 2018. (**Best Poster Award**) DOI: [10.1117/12.2294474](#)
- C3. [A. Rajagopal](#), V.R. Radzicki, S. Chandrasekaran, and H. Lee, "Tracking Information in RaDAR Image Formation and Classification Algorithms", *International Telemetry Conference (ITC)*, Oct 2017. ISSN: [0884-5123](#); [0074-9079](#)
- C2. [A. Rajagopal](#), K. Chellappan, S. Chandrasekaran, and A.P. Brown, "A machine learning pipeline for automated registration and classification of 3D LiDAR data", *SPIE Defense and Commercial Sensing: Geospatial Informatics*, May 2017. DOI: [10.1117/12.2262872](#)
- C1. G. Mariani, M. Haddad, [A. Rajagopal](#), D.L. Huffaker, "High-efficiency nanopillar solar cells employing wide-bandgap surface recombination barrier", *SPIE Photonics West*, Feb 2014. DOI: [10.1117/2.1201401.005303](#)

Workshop & White Papers

- * [A. Rajagopal](#), A.P. Leynes, N. Dwork, J. Scholey, T.A. Hope, and P.E.Z. Larson "Physics-driven Deep Learning for PET/MRI", *under review for IEEE SPS Magazine*, Dec 2021.
- W4. [A. Rajagopal](#), V.C. Madala, S. Chandrasekaran, and P.E.Z. Larson "Predicting Generalization in Deep Learning via Local Measures of Distortion", *NeurIPS 2020: 1st Workshop on Predicting Generalization in Deep Learning (PGDL)*, [arXiv:2012.06969](#), Dec 2020.
- W3. [A. Rajagopal](#), V.R. Radzicki, H. Lee, and S. Chandrasekaran "Deep Learning for Inverse Problems", 2019 *International Conference on Machine Learning (ICML): 1st Workshop on Theoretical Physics for Deep Learning*, Jun 2019. [[link](#)]
- W2. [A. Rajagopal](#), H.N. Mhaskar, and S. Chandrasekaran, "Deep Algorithms: designs for networks", [arxiv:1806.02003](#), Jun 2018.
- W1. [A. Rajagopal](#), A.C. Nguyen, and D.M. Briggs, "NeuroPass: A secure neural password based on EEG", *EE113D, UCLA*, Dec 2013. [[link](#)]

Patents & Disclosures

- D6. [A. Rajagopal](#) and P.E.Z. Larson "Enhancement of ultrasound imagery using multi- and cross-modality machine learning", University of California, disclosure filed Dec 2021.
- D5. [A. Rajagopal](#), T.A. Hope, and P.E.Z. Larson "Methods to predict the applicability and generalization performance of a machine learning algorithm at run-time", University of California, disclosure filed Sep 2021 (SF2022-062).
- D4. J. Scholey, [A. Rajagopal](#), P.E.Z. Larson, and A. Sudhyadhom "MRI-to-MVCT for radiotherapy", University of California, disclosure filed Jul 2021 (SF2022-011).
- P3. [A. Rajagopal](#), N. Dwork, P.E.Z. Larson, and T.A. Hope, "Methods for fusing deep learning-based image reconstructions with noisy image measurements with provable guarantees", University of California, provisional application filed Nov 2021 (SF2021-211).
- P2. [A. Rajagopal](#), K. Magudia, and P.E.Z. Larson "Mixed supervision methods for non-invasive machine learning classification, localization, and grading of cancer", University of California, provisional application filed Oct 2020, (SF2021-012, SF-2021-012-1-US-0).
- P1. F. Scalzo and [A. Rajagopal](#), "Machine-learning based denoising of doppler ultrasound blood flow and intracranial pressure signal", University of California, [US201662279653](#), Jan 2016.

Selected Talks

- 2021.12.02 "Deep Learning of Prostate Cancer for Radiotherapy", *RadOnc Roundtable*, UC San Francisco, USA
- 2021.08.09 "Understanding and Visualizing Generalization in UNets", *MIDL*, Luebeck, GER
- 2021.04.12 "Augmented Intelligence for Robust Radiology", *Bakar Computational Health Sciences Institute (BCHSI)*, USA
- 2021.02.25 "3D Y-Net for Mixed Supervision of Prostate Cancer Detection, Localization, and Grading from MRI", *Precision in Cancer Imaging and Therapy (PICT) Symposium*, UC San Francisco, USA
- 2021.02.03 "Robust Deep Learning for Radiology", *CI² SRG Pillar Meeting*, UC San Francisco, USA

- 2020.12.10 "Predicting Generalization via Local Measures of Distortion", *NeurIPS Workshop on PGDL*, Vancouver, CAN
- 2020.11.12 "Better MRI-Based Deep Learning Prediction of Gleason Grade via Mixed Strong-Weak Supervision from TRUS-MRI Fusion Biopsies", *UCSF Prostate Cancer Program*, UC San Francisco, USA
- 2020.06.12 "An Introduction to Machine Learning", *Center for Intelligent Imaging (CI²)*, UC San Francisco, USA
- 2020.04.10 "Deep Learning-based MR-derived PET Prediction", *ISMRM PET-MRI Study Group*, Sydney, AUS
- 2019.10.26 "Introduction to the GE PET/MR Toolbox", *SNMMI PET/MR Workshop*, New York, USA
- 2019.06.04 "Polynomial Approximation for Imaging and Recognition", *Invited talk*, UC San Francisco, USA
- 2019.02.13 "Deep Algorithms: designs for networks", *Naval Applications of Machine Learning*, NSWC Coronado, USA

Teaching

- Spring 2021 **Guest Lecturer**, ECE 594Q, University of California, Santa Barbara
"Fourier Imaging with CT, PET, and MRI"
- Summer 2020 **Guest Lecturer**, CI² Summer Lecture Series, University of California, San Francisco
"Introduction to Machine Learning"
- Spring 2015 **Guest Lecturer**, ECE 137B, University of California, Santa Barbara
"An Introduction to Feedback Control in Transistor Circuits"
- 2014 - 2017 **Teaching Assistant**, Dept. of Electrical & Computer Engineering, University of California, Santa Barbara
- | | | | |
|------|--------|----------|----------------------------------|
| 2014 | Fall | ECE 2A | Circuits, Devices, and Systems |
| 2015 | Winter | ECE 137A | Circuits and Electronics I |
| 2015 | Spring | ECE 137B | Circuits and Electronics II |
| 2015 | Fall | ECE 130A | Signal Analysis & Processing I |
| 2016 | Winter | ECE 130B | Signal Analysis & Processing II |
| 2016 | Spring | ECE 130C | Signal Analysis & Processing III |
| 2017 | Spring | ECE 130C | Signal Analysis & Processing III |
| 2017 | Fall | ECE 134 | Introduction to Fields and Waves |

Mentorship

I have had the pleasure of mentoring 13 students.

Student	Venue	Dates	Project Area
Vamshi C. Madala	M.S. Student, UCSF/UCSB	2020-2021	Generalization in deep learning
Jason Li	B.S. Student, Boston Univ.	Summer 2021	Example mining for RCC classification
Eduarda Lopes	H.S. Student, UCSF CI ² .	Summer 2021	RCC dataset curation
Ethan Epperly	B.S. Student, UCSB	2019-2020	Polynomial networks
Tiffany Huang	H.S. Student, UCSB RMP	Summer 2017	Cardiac DSP
Michael B. Zhang	H.S. Student, UCSB RMP	Summer 2017	Cardiac DSP
Catherine Chi	H.S. Student, UCSB RMP	Summer 2016	DSP on Web Audio API
Anuva Mittal	H.S. Student, UCSB RMP	Summer 2016	ICP DSP for IH prediction
Tejas Thvar	H.S. Student, UCSB RMP	Summer 2016	ICP DSP for IH prediction
Priyanka Multani	H.S. Student, UCSB RMP	Summer 2015	EEG DSP for seizure prediction
Gitanjali Multani	H.S. Student, UCSB RMP	Summer 2015	EEG DSP for seizure prediction
Steve Oh	B.S. Student, UCLA IGERT	Winter 2014	Web Framework for clean energy
Dong Jin Yu	B.S. Student, UCLA IGERT	Winter 2014	Web Framework for clean energy

Service

Reviewing: MIDL, IEEE TGRS, IEEE JBHI, IEEE WACV, IJCNN, Elsevier BSPC

Mentorship: UCLA SEAS Mentor (2012-2014), UCSB Research Mentorship Program (2015-2017), UCSF CI² Summer Internship Program (2021)

Symposia: UCSF CI² Summer Deep Learning Tutorial (2020-2021), NeurIPS volunteer (2020-2021), UCSB GS³ Graduate Simulation Seminars (2017-2019), ICML volunteer (2019-2020)

Conference/Symposium Abstracts

* N. Deveshwar, S. Sahin, A. Rajagopal, P.E.Z. Larson, "kspace GAN", *Synthesizing realistic MRI data with a Generative Adversarial Network*, Nov 2021.

- A12. J. Scholey, A. Rajagopal, E.G. Vasquez, A. Sudhyadhom, P.E.Z. Larson, "3D deep convolutional neural network for mapping MRI to synthetic MVCT for radiotherapy planning", (Oral), *American Association of Physicists in Medicine (AAPM) Annual Meeting*, Jul 2021.
- A11. J. Scholey, A. Rajagopal, E.G. Vasquez, A. Sudhyadhom, P.E.Z. Larson, "Towards higher accuracy mapping of MRI to electron density using a 3D deep convolutional neural network for MRI-only radiotherapy treatment planning", (Poster), *ISMRM*, Apr 2021.
- A11. K. Magudia, A. Rajagopal, A. Westphalen, P.E.Z. Larson. "Robust automated processing of whole gland prostate segmentation masks to sextant submasks using geometric techniques", (Oral), *Society of Abdominal Radiology (SAR)*, Mar 2021.
- A10. A. Rajagopal, K. Magudia, T.A. Hope, A. Westphalen, P.E.Z. Larson. "3D Y-Net for Mixed-Supervision of Prostate Cancer Detection, Localization, and Classification from MRI", (Power Pitch), *Precision in Cancer Imaging and Therapy (PICT) Symposium*, Feb 2021.
- A9. A. Rajagopal, K. Magudia, T.A. Hope, A. Westphalen, P.E.Z. Larson. "Better MRI-Based Deep Learning Prediction of Gleason Grade via Mixed Strong-Weak Supervision from TRUS-MRI Fusion Biopsies", (Poster), *UCSF Prostate Cancer Program*, Nov 2020.
- A8. Y. Natsuaki¹, A. Leynes, K. Wangerin, M. Hamdi, A. Rajagopal, R. Laforest, P. E. Z. Larson¹, T. A. Hope, S. St. James. "Lesion Insertion Tool to Assess PET-MR Attenuation Correction Methods: Matched Contralateral Uptake Lesion Insertions in Pelvis PET-MR Data", (Poster), *Joint AAPM-Comp Meeting*, Jul 2020.
- A7. A. Rajagopal, A.P. Leynes, S. St. James, R. Laforest, T.A. Hope, P.E.Z. Larson, "Deep Learning-based MR-derived PET Prediction for Patient-Conforming PET Phantoms", (Poster), *SNMMI*, May 2020.
- A6. A.P. Leynes, A. Rajagopal, V. Padoia, P.E.Z. Larson, "Visualizing intrinsic magnetic resonance imaging (MRI) dataset variations in image-space through Bayesian deep auto-encoding", (Poster), *ISMRM*, Apr 2020.
- A5. A. Rajagopal, A.P. Leynes, T.A. Hope, P.E.Z. Larson, "Deep PET-Prior: MR-derived Zero-Dose PET Prior for Differential Contrast Enhancement of PET", (Poster), *ISMRM*, Apr 2020.
- A4. A. Rajagopal, V.R. Radzicki, H. Lee, S. Chandrasekaran, "Electro-Echo-Cardiographic Imaging using Polynomial Networks", (Oral), *UC Systemwide Bioengineering Symposium*, Jun 2019.
- A3. A. Rajagopal, H. Mhaskar, S. Chandrasekaran, "Deep Algorithms", (Poster), *Human-Machine Collaboration (HMC) for National Security Workshop, MIT Lincoln Laboratory*, Nov 2018.
- A2. A. Rajagopal, S. Chandrasekaran, F. Scalzo, "Low-Complexity Tracking of Neurological State using Manifold Learning", (Poster), *UC Systemwide Bioengineering Symposium*, Jun 2017.
- A1. D. Dangwal, A. Rajagopal, T. Sherwood, "Novel Neural Computing Architectures", (Poster), *CRA-W Grad Cohort*, Apr 2017.