CURRICULUM VITAE
Nicha C. Dvornek, PhD

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Term: Primary Appointment: 07/01/2023-06/30/2026
Secondary Appointment: 07/01/2023-06/30/2026

School: Yale School of Medicine, Yale School of Engineering and Applied Science

Education:
08/2002-05/2006 BS, Biomedical Engineering, Johns Hopkins University, Baltimore, MD
08/2006-12/2007 MS, Engineering & Applied Science, Yale University, New Haven, CT
01/2008-05/2009 MPhil, Engineering & Applied Science, Yale University, New Haven, CT
06/2009-12/2012 PhD, Engineering & Applied Science, Yale University, New Haven, CT

Career/Academic Appointments:
09/2012-06/2015 Postdoctoral Associate, Department of Radiology & Biomedical Imaging (formerly Diagnostic Radiology), Yale University School of Medicine, New Haven, CT
07/2015-06/2017 Postdoctoral Fellow, Child Study Center, Yale University School of Medicine, New Haven, CT
07/2017-06/2018 Associate Research Scientist, Department of Radiology & Biomedical Imaging, Yale University School of Medicine, New Haven, CT
07/2018-present Assistant Professor, Department of Radiology & Biomedical Imaging, Yale University School of Medicine, New Haven, CT
09/2019-present Assistant Professor, Department of Biomedical Engineering, Yale University, New Haven, CT (Secondary appointment)

Professional Honors & Recognition

International/National/Regional
2005 Alpha Eta Mu Beta, Johns Hopkins University, Baltimore, MD
2005 Tau Beta Pi, Johns Hopkins University, Baltimore, MD
2006 Johns Hopkins University Women's Club Scholarship, Baltimore, MD
2006 Tau Beta Pi (Johns Hopkins University Chapter) Appreciation Award, Baltimore, MD
2006 Richard J. Johns Award, Johns Hopkins University Department of Biomedical Engineering, Baltimore, MD
2007 Honorable Mention Poster Award, SPIE Medical Imaging, San Diego, CA
2010 Travel Award, International Symposium on Biomedical Imaging 2010, Rotterdam, The Netherlands
2011 NIH-funded Travel Award, International Symposium on Biomedical Imaging 2011, Chicago, IL
2017 Scholarship for Junior Scientists from Underrepresented Populations, Information Processing in Medical Imaging 2017, Boone, NC
2019 Best Paper Award, 10th International Workshop on Machine Learning in Medical Imaging, Shenzhen, China

2019	Best Challenger Award, Connectomics in Neuroimaging - Transfer Learning Challenge, Shenzhen, China
2020	Best Paper Award, 2nd MICCAI Workshop on Domain Adaptation and Representation Transfer, Virtual
2021	Honorable Mention Reviewer Award, Medical Imaging with Deep Learning 2021, Virtual
2021	Honorable Mention Outstanding Reviewer, Medical Image Computing and Computer Assisted Intervention 2021, Virtual
2022	Outstanding Reviewer Award, Medical Image Computing and Computer Assisted Intervention 2022, Singapore
2024	Best Overall Performing Team, CXR-LT Challenge at MICCAI 2024, Marrakesh, Morocco

University

2006	Pierre W. Hoge Fellowship, Yale University, New Haven, CT
2006	Faculty of Engineering Fellowship, Yale University, New Haven, CT
2010	Graduate Student Association Conference Travel Fund Award, Yale University, New Haven, CT
2013	Diagnostic Radiology Grand Rounds Poster Award, Yale School of Medicine, New Haven, CT
2014	James Hudson Brown – Alexander Brown Coxe Postdoctoral Fellowship, Yale School of Medicine, New Haven, CT

Grant/Clinical Trials History:

Current Grants

Agency:	NIH/NINDS
ID#:	R01 NS035193
Title:	"Dynamic Functional Image-based Deep Learning for Therapy Assessment in Autism"
PI:	James S. Duncan, PhD / Lawrence H. Staib, PhD / Denis Sukhodolsky, PhD / Pamela Ventola, PhD
Role on project:	Investigator
Percent effort:	11.5%
Total costs:	$3,068,800
Project period:	4/01/2022-03/31/2027

Agency:	NIH/NIMH
ID#:	R01 MH100028
Title:	"Autism Center of Excellence Network: Neurodevelopmental Biomarkers of Late Diagnosis in Female and Gender Diverse Autism"
PI:	Denis Sukhodolsky, PhD (Subaward PI) / Kevin Pelphrey, PhD (Prime PI)
Role on project:	Investigator
Percent effort:	4%
Total costs:	$1,139,509 (subaward)
Project period:	09/06/2022-06/30/2027

Agency:	NIH/NIBIB
ID#	R21 EB032950
Title:	"Interpretable Deep Learning Models for Analysis of Longitudinal 3D Mammography Screenings"
PI:	Nicha C. Dvornek, PhD
Percent effort:	17.2%
Total costs:	$610,660 (of which $210,660 indirects)
Project period:	04/01/2023 – 03/31/2026

Agency: NIH/NHLBI
ID#: R01 HL169868
Title: "Development and Translation of Advanced Motion Correction Technologies for Cardiac PET/CT"
PI: Chi Liu, PhD / Mouaz Al-Mallah, MD (Subaward PI) / Bruce Spottiswoode, PhD (Subaward PI)
Role on project: Investigator
Percent effort: 5%
Total costs: $2,565,824
Project period: 04/17/2024 – 03/31/2028

Agency: ARPA-H
ID#: D24AC00156-00
Title: "Improving women's healthcare through development of affordable breast MRI"
PI: Todd Constable, PhD
Role on project: Investigator
Percent effort: 20%
Total costs: $12,087,876
Project period: 07/02/2024 - 07/01/2027

Agency: NIH/NHLBI
ID#: R56 HL175627
Title: "Personalized Prediction of Cardiovascular Outcomes through Machine Learning Analysis of Cardiac MRI and Genomics"
P.I.: Jennifer M Kwan, MD, PhD
Role on project: Investigator
Percent effort: 18.3%
Total costs: $753,813
Project period: 09/17/2024 – 08/31/2025

Agency: The Rector & Visitors of the University of Virginia
ID#: UVA IFO00000041
Title: "Neurogenetic Biomarkers of Autism"
P.I.: Abha Gupta, MD, PhD (Subaward PI) / Kevin Pelphrey, PhD (Prime PI)
Role on project: Investigator
Percent effort: 17%
Total costs: $216,147
Project period: 03/01/2025 - 02/29/2028

Past Grants

Agency: NIH/NLM
ID# R01 LM010142
Title: "Fast 3D Reconstruction Algorithms for Cryo-EM"
PI: Hemant D. Tagare, PhD
Role on project: Postdoctoral Associate, 09/01/2012-06/30/2014
Percent effort: 100% ($41,000 per year)
Total costs: $1,569,824
Project period: 07/15/2010 – 07/14/2015

Agency: NIH/NIMH
ID# R01 MH100028
Title: "Multimodal Developmental Neurogenetics of Females with ASD"
PI: Kevin Pelphrey, PhD; Subcontract - James S. Duncan, PhD / Pamela Ventola, PhD

Role on project: Investigator
Percent effort: 52%
Total costs: $25,438,041
Project period: 09/04/2012 – 07/31/2022

Agency: Yale School of Medicine
ID# James Hudson Brown – Alexander Brown Coxe Postdoctoral Fellowship
Title: "Fast Image Processing for Cryo-EM Structure Determination"
PI: Nicha C. Dvornek, PhD
Percent effort: 100%
Total costs: $42,000
Project period: 07/01/2014 – 06/30/2015

Agency: NIH/NIMH
ID# T32 MH018268
Title: "Training Program in Childhood Neuropsychiatric Disorders"
PI: Michael J. Crowley, PhD
Role on project: Postdoctoral Fellow, 07/01/2015-06/30/2017
Percent effort: 100%
Total costs: $2.0M (round of funding during fellowship)
Project period: 07/01/2015 – 06/30/2020 (round of funding during fellowship)

Agency: NIH/NINDS
ID# R01 NS035193
Title: "Subnetwork-based Quantitative Imaging Biomarkers for Therapy Assessment in Autism"
PI: James S. Duncan, PhD / Lawrence H. Staib, PhD / Kevin A. Pelphrey, PhD
Role on project: Associate Research Scientist, 07/01/2017-06/30/2018
Percent effort: 100%
Total costs: $1,917,951 (latest round of funding)
Project period: 09/01/2016 – 05/31/2022 (latest round of funding)

Agency: NIH/NINDS
ID#: R01 NS035193
Title: "Subnetwork-based Quantitative Imaging Biomarkers for Therapy Assessment in Autism"
PI: James S. Duncan, PhD / Lawrence H. Staib, PhD / Kevin A. Pelphrey, PhD
Role on project: Investigator
Percent effort: 15%
Total costs: $1,917,951 (latest round of funding)
Project period: 09/01/2016 – 03/31/2022 (latest round of funding)

Agency: NIH/NCI
ID#: R01 CA224140
Title: "Personalized Task-Based Respiratory Motion Correction for Low-Dose PET/CT"
P.I.: Chi Liu, PhD
Role on project: Investigator
Percent effort: 15%
Total costs: $3,123,091
Project period: 07/02/2018 – 06/30/2024

Agency: NIH/NIBIB
ID# R01 EB025468
Title: "Quantitative Low-Dose PET Imaging"
PI: Chi Liu, PhD / Richard Carson, PhD
Role on Project: Investigator

Percent effort: 3%
Total costs: $3,170,539
Project period: 07/24/2018 – 04/30/2024

Agency: NIH/NIBIB
ID#: R21 EB026759
Title: "Non-invasive Estimation of the Arterial Input Function in PET Studies using Whole-Body Physiological Models"
PI: Jean-Dominique Gallezot, PhD
Role on project: Investigator
Percent effort: 0.75%
Total costs: $670,000
Project period: 09/16/2019-06/30/2024

Agency: Wellcome Leap Fund
ID#: NONE
Title: "Connectome-based predictive models of later language and executive functions based on infant neuroimaging data"
PI: Dustin Scheinost, PhD
Role on project: Investigator
Percent effort: 5%
Total costs: $1,388,900
Project period: 08/01/2021-07/31/2024

Agency: Yale School of Medicine
ID#: Program for the Promotion of Interdisciplinary Team Science
Title: "Systems Neuroimaging Resource for Personalized Intervention"
PI: James S. Duncan, PhD / Richard Carson, PhD / Todd Constable, PhD / Douglas Rothman, PhD
Role on project: Project 4 co-leader
Percent effort: 2%
Total costs: $196,993
Project period: 09/01/2021-08/31/2023

Invited Speaking Engagements, Presentations, Symposia & Workshops Not Affiliated With Yale:

International/National

1. "Predicting Autism Behavioral Treatment Response from Baseline Functional MRI." Rising Stars in Biomedical, Massachusetts Institute of Technology, Cambridge, MA 2016.
2. "Temporal Medical Image Analysis: Brain Biomarkers to Body Motion Correction." Computational Neuroimage Science Laboratory, Stanford University, Stanford, CA (via Zoom), 2022.
3. "MCP-Net: Inter-frame Motion Correction with Patlak Regularization for Whole-body Dynamic PET." Learn2Reg 2022 (MICCAI Workshop), Singapore, 2022 (Given by my student Xueqi Guo due to schedule conflict).
4. "Women in AI & Healthcare: Their Journeys and Contributions." Panelist, Women in MICCAI Event at MICCAI 2023, Vancouver, Canada, 2023.
5. "From Paper to Story: Crafting Effective Research Presentations." Panelist, Women in MICCAI Webinar, Virtual, 2025.

Regional

1. "Deep Learning Applications in Medical Image Analysis." Computational and Data Science Colloquium, Southern Connecticut State University, New Haven, CT, April 2023.

Peer-Reviewed Presentations & Symposia Given at Meetings Not Affiliated With Yale:

International/National

1. Beaber A*, **Chitphakdithai N***, and Kaznessis Y. Design and Optimization of Gene Oscillatory Networks through Stochastic Simulations. Biomedical Engineering Society Annual Fall Meeting, Section on Highlights of Undergraduate Bioengineering Research, Baltimore, September 2005 (Oral presentation).
2. Jain AK, An M, **Chitphakdithai N**, Chintalapani G, Fichtinger G. C-arm calibration: is it really necessary?. SPIE Medical Imaging, San Diego, February 2007 (Poster presentation).
3. **Chitphakdithai N** and Duncan JS. Pairwise Registration of Images With Missing Correspondences Due to Resection. 7th IEEE International Symposium on Biomedical Imaging: From Nano to Macro, Rotterdam, April 2010 (Oral presentation).
4. **Chitphakdithai N** and Duncan JS. Non-rigid Registration with Missing Correspondences in Preoperative and Postresection Brain Images. 13th International Conference on Medical Image Computing and Computer Assisted Intervention, Beijing, September 2010 (Oral presentation).
5. **Chitphakdithai N**, Vives KP, and Duncan JS. Registration of Brain Resection MRI with Intensity and Location Priors. 8th IEEE International Symposium on Biomedical Imaging: From Nano to Macro, Chicago, April 2011 (Oral presentation).
6. **Chitphakdithai N**, Chiang VL, and Duncan, JS. Non-rigid Registration of Longitudinal Brain Tumor Treatment MRI. 33rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Boston, September 2011 (Oral presentation).
7. **Chitphakdithai N**, Chiang,VL, Vives K, Duncan JS. Robust Registration of Brain MRI with Missing Correspondences. Biomedical Engineering Society Annual Meeting, Hartford, October 2011 (Poster presentation).
8. **Chitphakdithai N**, Chiang VL, and Duncan JS. Tracking Metastatic Brain Tumors in Longitudinal Scans via Joint Image Registration and Labeling. Second International Workshop on Spatiotemporal Image Analysis for Longitudinal and Time-Series Image Data, Nice, October 2012 (Poster presentation).
9. **Dvornek NC**, Sigworth FJ, Tagare HD. A Fast EM Algorithm for Single Particle Reconstruction. National Resource for Automated Molecular Microscopy Workshop on Advanced Topics in EM Structure Determination, La Jolla, November, 2014 (Poster presentation).
10. **Dvornek NC**, Yang D, Venkataraman A, Ventola P, Staib LH, Pelphrey KA, Duncan JS. Prediction of Autism Treatment Response from Baseline fMRI using Random Forests and Tree Bagging. Sixth International Workshop on Multimodal Learning for Clinical Decision Support, Athens, October 2016 (Oral presentation).
11. **Dvornek NC**, Ventola P, Pelphrey KA, Duncan JS. Identifying Autism from Resting-State fMRI Using Long Short-Term Memory Networks. Eighth International Workshop on Machine Learning in Medical Imaging, Quebec City, September 2017 (Oral presentation).
12. **Dvornek NC**, Ventola P, Duncan JS. Combining Phenotypic and Resting-State fMRI Data for Autism Classification with Recurrent Neural Networks. 15th IEEE International Symposium on Biomedical Imaging, Washington, D.C., April 2018 (Poster presentation).
13. Zhuang J, **Dvornek NC**, Li X, Yang D, Ventola P, Duncan JS. Prediction of Pivotal Response Treatment Outcome with Task Fmri Using Random Forest and Variable Selection. 15th IEEE International Symposium on Biomedical Imaging: From Nano to Macro, Washington, D.C., April 2018 (Poster presentation).
14. Li X, **Dvornek NC**, Papademetris X, Zhuang J, Staib LH, Ventola P, Duncan JS. 2-Channel Convolutional 3d Deep Neural Network (2cc3d) for Fmri Analysis: Asd Classification and Feature Learning. 15th IEEE International Symposium on Biomedical Imaging: From Nano to Macro, Washington, D.C., April 2018 (Oral presentation).
15. Li X, **Dvornek NC**, Zhuang J, Yang J, Ventola P, Duncan JS. ASD Brain Biomarker Detection on fMRI Images by Analyzing Deep Neural Network (DNN). Organization for Human Brain Mapping Annual Meeting, Singapore, June 2018 (Oral presentation).

16. Li X, **Dvornek NC**, Zhuang J, Ventola P, Duncan JS. Brain Biomarker Interpretation in ASD Using Deep Learning and fMRI. International Conference on Medical Image Computing and Computer Assisted Intervention, Granada, September 2018 (Poster presentation).
17. **Dvornek NC**, Yang D, Ventola P, Duncan JS. Learning Generalizable Recurrent Neural Networks from Small Task-fMRI Datasets. International Conference on Medical Image Computing and Computer Assisted Intervention, Granada, September 2018 (Poster presentation).
18. Zhuang J, **Dvornek NC**, Li X, Ventola P, Duncan JS. Prediction of severity and treatment outcome for ASD from fMRI. Predictive Intelligence in Medicine (MICCAI Workshop), Granada, September 2018 (Poster presentation).
19. Zhuang J, **Dvornek NC**, Zhao Q, Li X, Ventola P, Duncan JS. Prediction of Treatment Outcome for Autism from Structure of the Brain Based on Sure Independence Screening. IEEE International Symposium on Biomedical Imaging, Venice, April 2019 (Poster presentation).
20. Li X, **Dvornek NC**, Zhou Y, Zhuang J, Ventola P, Duncan JS. Efficient Interpretation of Deep Learning Models Using Graph Structure and Cooperative Game Theory: Application to ASD Biomarker Discovery. Information Processing in Medical Imaging, Hong Kong, June 2019 (Poster presentation).
21. Li X, **Dvornek NC**, Zhou Y, Zhuang J, Ventola P, Duncan JS. Graph Neural Network for Interpreting Task-fMRI Biomarkers. International Conference on Medical Image Computing and Computer Assisted Intervention, Shenzhen, October 2019 (Poster presentation).
22. Zhuang J, **Dvornek NC**, Li X, Ventola P, Duncan JS. Invertible Network for Classification and Biomarker Selection for ASD. International Conference on Medical Image Computing and Computer Assisted Intervention, Shenzhen, October 2019 (Poster presentation).
23. Yang J, **Dvornek NC**, Zhang F, Chapiro J, Lin M, Duncan JS. Unsupervised Domain Adaptation via Disentangled Representations: Application to Cross-Modality Liver Segmentation. International Conference on Medical Image Computing and Computer Assisted Intervention, Shenzhen, October 2019 (Poster presentation).
24. **Dvornek NC**, Li X, Zhuang J, Duncan JS. Jointly Discriminative and Generative Recurrent Neural Networks for Learning from fMRI. 10th International Workshop on Machine Learning in Medical Imaging, Shenzhen, October 2019 (Oral presentation).
25. Guo Y, **Dvornek N**, Lu Y, Tsai YJ, Hamill J, Casey M, Liu C. Deep learning based respiratory pattern classification and applications in PET/CT motion correction. IEEE Nuclear Science Symposium and Medical Imaging Conference, Manchester, October 2019 (Poster presentation).
26. Yang J, **Dvornek NC**, Zhang F, Zhuang J, Chapiro J, Lin M, Duncan JS. Domain-Agnostic Learning with Anatomy-Consistent Embedding for Cross-Modality Liver Segmentation. IEEE International Conference on Computer Vision Workshop, Visual Recognition for Medical Images, Seoul, October 2019 (Poster Presentation).
27. Zhuang J, Yang J, Gu L, **Dvornek N**. Shelfnet for fast semantic segmentation. IEEE International Conference on Computer Vision Workshop on Computer Vision for Road Scene Understanding and Autonomous Driving, Seoul, October 2019 (Poster Presentation).
28. Zhuang J, **Dvornek NC**, Li X, Yang J, Duncan JS. Decision Explanation and Feature Importance for Invertible Networks. IEEE International Conference on Computer Vision Workshop on Interpreting and Explaining Visual Artificial Intelligence Models, Seoul, November 2019 (Oral Presentation).
29. Yang J, **Dvornek NC**, Zhang F, Chapiro J, Lin M, Abajian A, Duncan JS. Hepatocellular Carcinoma Intra-arterial Treatment Response Prediction for Improved Therapeutic Decision-Making. Medical Imaging Meets NeurIPS (NeurIPS Workshop), Vancouver, December 2019 (Poster presentation)
30. Li X, **Dvornek NC**, Zhuang J, Ventola P, Duncan J. Graph embedding using Infomax for ASD classification and brain functional difference detection. SPIE Medical Imaging, Houston, February 2020 (Oral presentation).
31. **Dvornek NC**, Ventola P, Duncan JS. Estimating Reproducible Functional Networks Associated with Task Dynamics Using Unsupervised LSTMs. 17th IEEE International Symposium on Biomedical Imaging, Virtual, April 2020 (Video presentation).

32. Drapalik K, Williams MJ, Sukhodulsky D, **Dvornek N**, Duncan J, Ventola P. Translating Neuroprediction into Precision Medicine via Brain Priming. International Society for Autism Research Annual Meeting, Virtual, June 2020 (Poster presentation).
33. Li X, Gu Y, **Dvornek N**, Duncan J. Boosting Multi-site fMRI Analysis Using Privacy-preserving Federated Learning. Organization for Human Brain Mapping Annual Meeting, Virtual, June 2020 (Poster presentation).
34. Zhuang J, **Dvornek N**, Li X, Tatikonda S, Papademetris X, Duncan J. Adaptive Checkpoint Adjoint Method for Gradient Estimation in Neural ODE. International Conference on Machine Learning, Virtual, July 2020 (Video presentation).
35. Li X, Zhou Y, **Dvornek NC**, Gu Y, Ventola P, Duncan JS. Efficient Shapley Explanation For Features Importance Estimation Under Uncertainty. International Conference on Medical Image Computing and Computer Assisted Intervention, Virtual, October 2020 (Short oral / video / poster presentation).
36. Li X, Zhou Y, **Dvornek NC**, Zhang M, Zhuang J, Ventola P, Duncan JS. Pooling Regularized Graph Neural Network for fMRI Biomarker Analysis. International Conference on Medical Image Computing and Computer Assisted Intervention, Virtual, October 2020 (Short oral / video / poster presentation).
37. Yang, J, Li, X, Pak, D, **Dvornek, N**, Chapiro, J, Lin, M, Duncan, J. Cross-Modality Segmentation by Self-Supervised Semantic Alignment in Disentangled Content Space. 2nd MICCAI Workshop on Domain Adaptation and Representation Transfer, Virtual, October 2020 (Oral / video / poster presentation).
38. **Dvornek NC**, Li X, Zhuang J, Ventola P, Duncan JS. Demographic-Guided Attention in Recurrent Neural Networks for Modeling Neuropathophysiological Heterogeneity. 11th International Workshop on Machine Learning in Medical Imaging (MICCAI workshop), Virtual, October 2020 (Short oral / video presentation).
39. Zhuang, J, Tang, T, Ding, Y, Tatikonda, SC, **Dvornek, N**, Papademetris, X and Duncan, J. AdaBelief Optimizer: Adapting Stepsizes by the Belief in Observed Gradients. Conference on Neural Information Processing Systems, Virtual, December 2020 (Spotlight (oral) presentation).
40. Wang S and **Dvornek NC.** A Metamodel Structure for Regression Analysis: Application to Prediction of Autism Spectrum Disorder Severity. IEEE International Symposium on Biomedical Imaging, Virtual, April 2021 (Poster presentation).
41. Zhuang J, **Dvornek NC**, Duncan JS. MALI: A memory efficient and reverse accurate integrator for Neural ODEs. International Conference on Learning Representations, Virtual, May 2021 (Poster presentation).
42. Guo X, Wu J, Chen MK, Onofrey J, Pang Y, Pigg D, Casey M, **Dvornek N**, Liu C. Inter-pass motion correction for whole-body dynamic parametric PET imaging. Society of Nuclear Medicine & Molecular Imaging Annual Meeting, Virtual, June 2021 (Poster presentation).
43. Zhuang J, **Dvornek N**, Tatikonda S, Papademetris X, Ventola P, Duncan JS. Multiple-shooting adjoint method for whole-brain dynamic causal modeling. Information Processing in Medical Imaging, Virtual, June 2021 (Oral presentation).
44. Guo X, Zhou B, Pigg D, Casey ME, Liu C, **Dvornek NC**. Inter-frame motion correction for whole-body parametric imaging using long short-term memory in a deep convolutional framework. IEEE Nuclear Science Symposium and Medical Imaging Conference, Virtual, October 2021 (Mini-oral presentation, 2nd Best Poster Award).
45. Zhuang J, Ding Y, Tang T, **Dvornek N**, Tatikonda SC, Duncan J. Momentum Centering and Asynchronous Update for Adaptive Gradient Methods. Conference on Neural Information Processing Systems, Virtual, December 2021 (Poster presentation).
46. Zhuang J, Gong B, Yuan L, Cui Y, Adam H, **Dvornek N**, Tatikonda S, Duncan J, Liu T. Surrogate Gap Minimization Improves Sharpness-Aware Training. International Conference on Learning Representations, Virtual, April 2022 (Poster presentation).
47. Guo X, Chi L, **Dvornek N.** A Patlak-regularized deep learning inter-frame motion correction framework for whole-body dynamic PET. Society of Nuclear Medicine & Molecular Imaging Annual Meeting, Vancouver, June 2022 (Oral presentation).

48. Guo X, Zhou B, Chen X, Liu C, **Dvornek NC**. MCP-Net: Inter-frame Motion Correction with Patlak Regularization for Whole-body Dynamic PET. International Conference on Medical Image Computing and Computer Assisted Intervention, Singapore, September 2022 (Poster presentation).
49. Ryu S, **Dvornek NC**, Kwan J. A Novel Approach for Diagnosis of Clonal Hematopoiesis of Indeterminate Potential Using Deep Neural Networks. IEEE MIT Undergraduate Research Technology Conference, Boston, October 2022 (Poster presentation).
50. Guo X, Shi L, Chen X,Liu Q, Xie H, Zhou B, Liu Y-H, Palyo R, Liu A, Miller EJ, Sinusas AJ, Spottiswoode B, Liu C, and **Dvornek NC**. Early-to-late frame conversion using a temporally informed GAN for cardiac dynamic PET motion correction. Society of Nuclear Medicine and Molecular Imaging Annual Meeting, Chicago, June 2023 (Oral presentation).
51. Ryu S, Ahn S, Espinoza J, Jha A, Halene S, Duncan JS, Kwan J, **Dvornek NC**. A Novel Approach for Assessment of Clonal Hematopoiesis of Indeterminate Potential Using Deep Neural Networks. Medical Imaging with Deep Learning, Nashville, July 2023 (Poster presentation).
52. **Dvornek NC**, Sullivan C, Duncan JS, Gupta AR. Copy Number Variation Informs fMRI-Based Prediction of Autism Spectrum Disorder. International Workshop on Machine Learning in Clinical Neuroimaging, Vancover, October 2023 (Oral presentation).
53. Guo X, Shi L, Chen X, Zhou B, Liu Q, Xie H, Liu Y-H, Palyo R, Miller E, Sinusas A, Spottiswoode B, Liu C, and **Dvornek NC**. TAI-GAN: Temporally and Anatomically Informed GAN for early-to-late frame conversion in dynamic cardiac PET motion correction. 8th International Workshop on Simulation and Synthesis in Medical Imaging (MICCAI Workshop), Vancouver, October 2023 (Poster presentation).
54. Wang J, **Dvornek NC**, Staib LH, Duncan JS. Learning Sequential Information in Task-Based fMRI for Synthetic Data Augmentation. International Workshop on Machine Learning in Clinical Neuroimaging, Vancouver, October 2023 (Poster presentation).
55. Ryu A, Christofides A, Martinez CM, Jayakrishnan R, Ahn S, Guajardo AF, Espinoza J, Chen N, Jha A, Im Y, Halene S, VanOudenhove J, Mojibian H, Duncan J, **Dvornek N**, Kwan JM. A Novel Approach Using Deep Neural Networks on Clinical Cardiac MRIs Can Identify Patients With Clonal Hematopoiesis of Indeterminate Potential With High Accuracy. American Heart Association Scientific Sessions, Philadelphia, November 2023 (Poster presentation).
56. Du Y, Hooley RJ, Lewin J, **Dvornek NC**. SIFT-DBT: SELF-SUPERVISED INITIALIZATION AND FINE-TUNING FOR IMBALANCED DIGITAL BREAST TOMOSYNTHESIS IMAGE CLASSIFICATION. 21st IEEE International Symposium on Biomedical Imaging, Athens, May 2024 (Poster presentation).
57. Duan P, **Dvornek NC**, Wang J, Eilbott J, Du Y, Sukhodolsky DG, Duncan JS. Spectral brain graph neural network for prediction of anxiety in children with Autism Spectrum Disorder. 21st IEEE International Symposium on Biomedical Imaging, Athens, May 2024 (Oral presentation).
58. Du Y, Chang B, **Dvornek NC**. CLEFT: Language-Image Contrastive Learning with Efficient Large Language Model and Prompt Fine-Tuning. International Conference on Medical Image Computing and Computer-Assisted Intervention, Marrakesh, October 2024 (Poster presentation).
59. Zhou Y, Duan P, Du Y, **Dvornek NC**. Self-Supervised Pre-training Tasks for an fMRI Time-series Transformer in Autism Detection. International Workshop on Machine Learning in Clinical Neuroimaging, Marrakesh, October 2024 (Poster presentation).
60. Du Y, **Dvornek NC**. Multi-view And Multi-scale Alignment For Medical Contrastive Language-Image Pre-Training And Prediction Aggregation for Long-tail Classification. MICCAI 2024 CXR-LT Challenge Event, Marrakesh, October 2024 (Oral presentation)
61. Guo X, Tsai YJ, Liu Q, Guo L, Valadez GH, **Dvornek NC**, Liu C. Deep Learning-based Dynamic PET Intra-frame Motion Correction and Integration with Inter-frame Motion Estimation. IEEE Nuclear Science Symposium (NSS), Medical Imaging Conference (MIC) and Room Temperature Semiconductor Detector Conference (RTSD), Tampa, October 2024 (Poster presentation).

62. Guo X, Shah V, Pigg D, Platsch G, Chen X, Xie H, Gan W, **Dvornek NC**, Liu C, Hermosillo G, Partin L. Time-Aware GAN for Uptake Time Correction and Standard Uptake Value Harmonization in Dynamic PET Imaging. GenAI for Health: Potential, Trust and Policy Compliance, Vancover, December 2024 (Poster presentation).
63. Du Y, Zhang J, Zeevi T, **Dvornek NC**, Onofrey JA. SRE-Conv: Symmetric Rotation Equivariant Convolution for Biomedical Image Classification. IEEE International Symposium on Biomedical Imaging, Houston, April 2025 (Poster presentation).
64. Zhang J, Du Y, **Dvornek NC**, Onofrey JA. Improved Vessel Segmentation with Symmetric Rotation-Equivariant U-Net. IEEE International Symposium on Biomedical Imaging, Houston, April 2025 (Poster presentation).
65. Wang J, **Dvornek NC**, Duan P, Staib LH, Duncan J. Towards Zero-Shot Task-Generalizable Learning on fMRI. IEEE International Symposium on Biomedical Imaging, Houston, April 2025 (Poster presentation).
66. Duan P, **Dvornek NC**, Wang J, Staib LH, Duncan J. Causal Modeling of fMRI Time-Series for Interpretable Autism Spectrum Disorder Classification. IEEE International Symposium on Biomedical Imaging, Houston, April 2025 (Oral presentation).
67. Du Y, Onofrey J, **Dvornek NC**. Multi-View and Multi-Scale Alignment for Contrastive Language-Image Pre-training in Mammography. Information Processing in Medical Imaging, Kos Island, May 2025 (Oral presentation, Runner-Up Best Oral Award).
68. Zhou Y, Xie H, Xia M, Liu Q, Zhou B, Hou J, Chen T, Guo L, Yu T, Zheng X, Wang H, Li B, Rominger A, Shi K, **Dvornek N**, Liu C. Fed-NDIF: A Federated Noise-Embedded Diffusion Model for Low-count PET, Society of Nuclear Medicine and Molecular Imaging Annual Meeting, New Orleans, June 2025 (Poster presentation).
69. Wang J, **Dvornek NC**, Duan P, Staib LH, Ventola P, Duncan JS. STNAGNN: Data-driven Spatio-temporal Brain Connectivity beyond FC. Medical Imaging with Deep Learning, Salt Lake City, July 2025 (Oral presentation).
70. Chen F, Du Y, Zeevi T, **Dvornek NC**, Onofrey JA. Equivariant Imaging Biomarkers for Robust Unsupervised Segmentation of Histopathology. Medical Imaging with Deep Learning, Salt Lake City, July 2025 (Poster presentation).

Professional Service

***Journals*:**

Editorial Boards

2024-present Associate Editor, *Computerized Medical Imaging and Graphics*
2024-present Associate Editor, *Journal of Medical Imaging*
2021-present Associate Editor, *Frontiers in Neuroscience*, Brain Imaging Methods Section
2021-2022 Guest Associate Editor, *Medical Physics*

Reviewer

Transactions on Machine Learning Research, EJNMMI Physics, Scientific Reports, Journal of Neural Engineering, Frontiers in Neuroscience, *Frontiers in Human Neuroscience*, *PLOS ONE, Medical Image Analysis, Frontiers in Computational Neuroscience, Journal of Magnetic Resonance Imaging, IEEE Transactions on Medical Imaging, Journal of Mathematical Imaging and Vision*

***Professional Organizations*:**

Medical Image Computing and Computer Assisted Intervention (MICCAI) Society

2011-2022 Reviewer, MICCAI Conference
2016-present Member
2021-2023 Program Committee Member, Workshop on Data Augmentation, Labeling, and Imperfections (DALI)

2022-2024 Organizing Committee Member, Workshop on Machine Learning in Clinical Neuroimaging (MLCN)
2023-present Area Chair, MICCAI Conference
2023-present Board Member - Honorary Elections Officer, Women in MICCAI (WiM)
2024 Reviewer, Workshop on Advancing Data Solutions in Medical Imaging AI (ADSMI)

Institute of Electrical and Electronics Engineers (IEEE)
2013-present Reviewer, IEEE International Symposium on Biomedical Imaging (ISBI)
2022-2023, 2026 Reviewer, IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)
2023, 2025 Reviewer, IEEE/CVF International Conference on Computer Vision (ICCV)

Information Processing in Medical Imaging (IPMI)
2025 Reviewer, IPMI Conference

Medical Imaging with Deep Learning (MIDL)
2019 Area Chair, MIDL Conference
2020-2021 Reviewer, MIDL Conference
2021 Session Chair, MIDL Conference
2022-present Technical Committee Member (Area Chair), MIDL Conference

Neural Information Processing Systems (NeurIPS)
2019, 2021-22 Program Committee Member, Medical Imaging meets NeurIPS (NeurIPS Workshop)
2021-present Reviewer, NeurIPS Conference

International Machine Learning Society (ICML)
2021 Organizing Committee Member, Interpretable Machine Learning in Healthcare (ICML Workshop)

International Conference on Learning Representations (ICLR)
2021-2023 Reviewer, ICLR

***Yale University/Hospital System*:**

Departmental Committees
2017-2018 Member, Planning Committee for Division of Bioimaging Sciences Retreat 2018, Dept. of Radiology & Biomedical Imaging, School of Medicine
2020 Co-organizer, BME Open House for Prospective Ph.D. Students Planning Committee, Dept. of Biomedical Engineering, School of Engineering & Applied Science
2021-2022 Member, Neuroengineering Faculty Search Committee, Dept. of Biomedical Engineering, School of Engineering & Applied Science
2022-2023 Member, Computational Biomedical Engineering Faculty Search Committee, Dept. of Biomedical Engineering, School of Engineering & Applied Science
2023 Member, BME Retreat/Reunion Committee, Dept. of Biomedical Engineering, School of Engineering & Applied Science
2024 Member, PET Center Faculty Search Committee, Dept. of Radiology & Biomedical Imaging, School of Medicine

Public Service / Media Presence:

Media Presence:
2021 Guest Lecturer, Introduction to Deep Learning, Introduction to Medical Software Course, Coursera, https://www.coursera.org/learn/introduction-to-medical-software

2023 Interviewed as Organizer of a featured MICCAI 2023 workshop, "Machine Learning in Clinical Neuroimaging (MLCN)," *Computer Vision News*, RSIP Vision, https://www.rsipvision.com/ComputerVisionNews-2023May/44/

Bibliography:

Peer-Reviewed Original Research

Journal and Full-Length Major Conference Articles
(Conference articles also appear under Peer Reviewed Presentations)

1. **Chitphakdithai N**, Duncan JS. Pairwise Registration of Images with Missing Correspondences Due to Resection. Proc IEEE Int Symp Biomed Imaging. 2010;2010:1025-8. doi: 10.1109/ISBI.2010.5490164. PMID: 21804926; PMCID: PMC3146293.
2. **Chitphakdithai N**, Duncan JS. Non-rigid registration with missing correspondences in preoperative and postresection brain images. Med Image Comput Comput Assist Interv. 2010;13(Pt 1):367-74. doi: 10.1007/978-3-642-15705-9_45. PMID: 20879252; PMCID: PMC3031159.
3. **Chitphakdithai N**, Vives KP, Duncan JS. Registration of Brain Resection Mri with Intensity and Location Priors. Proc IEEE Int Symp Biomed Imaging. 2011;2011:1520-3. Epub 20110609. doi: 10.1109/ISBI.2011.5872690. PMID: 30774752; PMCID: PMC6376974.
4. **Dvornek NC**, Sigworth FJ, Tagare HD. SubspaceEM: A fast maximum-a-posteriori algorithm for cryo-EM single particle reconstruction. J Struct Biol. 2015;190(2):200-14. Epub 20150331. doi: 10.1016/j.jsb.2015.03.009. PMID: 25839831; PMCID: PMC4453989.
5. Venkataraman A, Yang DY, **Dvornek N**, Staib LH, Duncan JS, Pelphrey KA, Ventola P. Pivotal response treatment prompts a functional rewiring of the brain among individuals with autism spectrum disorder. Neuroreport. 2016;27(14):1081-5. doi: 10.1097/WNR.0000000000000662. PMID: 27532879; PMCID: PMC5007196.
6. Yang D, Pelphrey KA, Sukhodolsky DG, Crowley MJ, Dayan E, **Dvornek NC**, Venkataraman A, Duncan J, Staib L, Ventola P. Brain responses to biological motion predict treatment outcome in young children with autism. Translational Psychiatry. 2016;6(11):e948. Epub 20161115. doi: 10.1038/tp.2016.213. PMID: 27845779; PMCID: PMC5314125.
7. Zhuang J, **Dvornek NC**, Li X, Yang D, Ventola P, Duncan JS. Prediction of Pivotal Response Treatment Outcome with Task Fmri Using Random Forest and Variable Selection. Proc IEEE Int Symp Biomed Imaging. 2018;2018:97-100. Epub 20180524. doi: 10.1109/ISBI.2018.8363531. PMID: 33014282; PMCID: PMC7532925.
8. **Dvornek NC**, Ventola P, Duncan JS. Combining Phenotypic and Resting-State Fmri Data for Autism Classification with Recurrent Neural Networks. Proc IEEE Int Symp Biomed Imaging. 2018;2018:725-8. Epub 20180524. doi: 10.1109/ISBI.2018.8363676. PMID: 30288208; PMCID: PMC6166875.
9. Li X, **Dvornek NC**, Papademetris X, Zhuang J, Staib LH, Ventola P, Duncan JS. 2-Channel Convolutional 3d Deep Neural Network (2cc3d) for Fmri Analysis: Asd Classification and Feature Learning. Proc IEEE Int Symp Biomed Imaging. 2018;2018:1252-5. Epub 20180524. doi: 10.1109/isbi.2018.8363798. PMID: 32983370; PMCID: PMC7519578.
10. Li X, **Dvornek NC**, Zhuang J, Ventola P, Duncan JS. Brain Biomarker Interpretation in ASD Using Deep Learning and fMRI. Med Image Comput Comput Assist Interv. 2018;11072:206-14. Epub 20180913. doi: 10.1007/978-3-030-00931-1_24. PMID: 32984865; PMCID: PMC7519581.
11. **Dvornek NC**, Yang D, Ventola P, Duncan JS. Learning Generalizable Recurrent Neural Networks from Small Task-fMRI Datasets. Med Image Comput Comput Assist Interv. 2018;11072:329-37. Epub 20180913. doi: 10.1007/978-3-030-00931-1_38. PMID: 30873514; PMCID: PMC6411297.
12. Zhuang J, **Dvornek NC**, Zhao Q, Li X, Ventola P, Duncan JS. Prediction of Treatment Outcome for Autism from Structure of the Brain Based on Sure Independence Screening. Proceedings IEEE International Symposium on Biomedical Imaging. 2019;2019:404-8. Epub 20190711. doi: 10.1109/ISBI.2019.8759156. PMID: 32256966; PMCID: PMC7119202.
13. Li X, **Dvornek NC**, Zhou Y, Zhuang J, Ventola P, Duncan JS. Efficient Interpretation of Deep Learning Models Using Graph Structure and Cooperative Game Theory: Application to ASD

Biomarker Discovery. Inf Process Med Imaging. 2019;11492:718-30. Epub 20190522. doi: 10.1007/978-3-030-20351-1_56. PMID: 32982121; PMCID: PMC7519580.

14. Li X, **Dvornek NC**, Zhou Y, Zhuang J, Ventola P, Duncan JS. Graph Neural Network for Interpreting Task-fMRI Biomarkers. Med Image Comput Comput Assist Interv. 2019;11768:485-93. Epub 20191010. doi: 10.1007/978-3-030-32254-0_54. PMID: 32984866; PMCID: PMC7519579.
15. Zhuang J, **Dvornek NC**, Li X, Ventola P, Duncan JS. Invertible Network for Classification and Biomarker Selection for ASD. Med Image Comput Comput Assist Interv. 2019;11766:700-8. Epub 20191010. doi: 10.1007/978-3-030-32248-9_78. PMID: 32274471; PMCID: PMC7144624.
16. Yang J, **Dvornek NC**, Zhang F, Chapiro J, Lin M, Duncan JS. Unsupervised Domain Adaptation via Disentangled Representations: Application to Cross-Modality Liver Segmentation. Med Image Comput Comput Assist Interv. 2019;11765:255-63. Epub 20191010. doi: 10.1007/978-3-030-32245-8_29. PMID: 32377643; PMCID: PMC7202929.
17. **Dvornek NC**, Ventola P, Duncan JS. Estimating Reproducible Functional Networks Associated with Task Dynamics Using Unsupervised Lstms. Proc IEEE Int Symp Biomed Imaging. 2020;2020. Epub 20200522. doi: 10.1109/isbi45749.2020.9098377. PMID: 34422224; PMCID: PMC8375550.
18. Li X, Gu Y, **Dvornek N**, Staib LH, Ventola P, Duncan JS. Multi-site fMRI analysis using privacy-preserving federated learning and domain adaptation: ABIDE results. Med Image Anal. 2020;65:101765. Epub 20200702. doi: 10.1016/j.media.2020.101765. PMID: 32679533; PMCID: PMC7569477.
19. Li X, Zhou Y, **Dvornek NC**, Gu Y, Ventola P, Duncan JS. Efficient Shapley Explanation For Features Importance Estimation Under Uncertainty. Med Image Comput Comput Assist Interv. 2020;12261:792-801. Epub 20200929. doi: 10.1007/978-3-030-59710-8_77. PMID: 34308439; PMCID: PMC8299327.
20. Li X, Zhou Y, **Dvornek NC**, Zhang M, Zhuang J, Ventola P, Duncan JS. Pooling Regularized Graph Neural Network for fMRI Biomarker Analysis. Med Image Comput Comput Assist Interv. 2020;12267:625-35. Epub 20200929. doi: 10.1007/978-3-030-59728-3_61. PMID: 33043324; PMCID: PMC7544244.
21. Zhang F, **Dvornek N**, Yang J, Chapiro J, Duncan J. Layer Embedding Analysis in Convolutional Neural Networks for Improved Probability Calibration and Classification. IEEE Trans Med Imaging. 2020;39(11):3331-42. Epub 20201028. doi: 10.1109/TMI.2020.2990625. PMID: 32356739; PMCID: PMC7606489.
22. Zhuang J, **Dvornek N**, Li X, Tatikonda S, Papademetris X, Duncan J. Adaptive Checkpoint Adjoint Method for Gradient Estimation in Neural ODE. International Conference on Machine Learning, Proc Mach Learn Res. 2020;119:11639-49. PMID: 34308361; PMCID: PMC8299461.
23. Zhuang, J, Tang, T, Ding, Y, Tatikonda, SC, **Dvornek, N**, Papademetris, X and Duncan, J. AdaBelief Optimizer: Adapting Stepsizes by the Belief in Observed Gradients. Advances in Neural Information Processing Systems. 2020;33:18795-806.
24. Schirmer MD, Venkataraman A, Rekik I, Kim M, Mostofsky SH, Nebel MB, Rosch K, Seymour K, Crocetti D, Irzan H, Hutel M, Ourselin S, Marlow N, Melbourne A, Levchenko E, Zhou S, Kunda M, Lu H, **Dvornek NC**, Zhuang J, Pinto G, Samal S, Zhang J, Bernal-Rusiel JL, Pienaar R, Chung AW. Neuropsychiatric disease classification using functional connectomics - results of the connectomics in neuroimaging transfer learning challenge. Medical Image Analysis. 2021;70:101972. Epub 20210128. doi: 10.1016/j.media.2021.101972. PMID: 33677261; PMCID: PMC9115580.
25. Wang S, **Dvornek NC**. A Metamodel Structure For Regression Analysis: Application To Prediction Of Autism Spectrum Disorder Severity. Proc IEEE Int Symp Biomed Imaging. 2021;2021:1338-41. Epub 20210525. doi: 10.1109/ISBI48211.2021.9434009.
26. Zhuang J, **Dvornek NC**, Duncan JS. MALI: A memory efficient and reverse accurate integrator for Neural ODEs. International Conference on Learning Representations. 2021.
27. Zhuang J, **Dvornek N**, Tatikonda S, Papademetris X, Ventola P, Duncan JS. Multiple-shooting adjoint method for whole-brain dynamic causal modeling. Information Processing in Medical Imaging. 2021;12729:58-70. Epub 20210614. doi: 10.1007/978-3-030-78191-0_5.
28. Li X, Zhou Y, **Dvornek N**, Zhang M, Gao S, Zhuang J, Scheinost D, Staib LH, Ventola P, Duncan JS. BrainGNN: Interpretable Brain Graph Neural Network for fMRI Analysis. Medical Image Analysis. 2021;74:102233. Epub 20210912. doi: 10.1016/j.media.2021.102233. PMID: 34655865; PMCID: PMC9916535.

29. Shi L, Lu Y, **Dvornek N**, Weyman CA, Miller EJ, Sinusas AJ, Liu C. Automatic Inter-Frame Patient Motion Correction for Dynamic Cardiac PET Using Deep Learning. IEEE Trans Med Imaging. 2021;40(12):3293-304. Epub 20211130. doi: 10.1109/TMI.2021.3082578. PMID: 34018932; PMCID: PMC8670362.
30. Zhuang J, Ding Y, Tang T, **Dvornek N**, Tatikonda SC, Duncan J. Momentum Centering and Asynchronous Update for Adaptive Gradient Methods. Advances in Neural Information Processing Systems. 2021;34: 28249-60.
31. Zhuang J, Gong B, Yuan L, Cui Y, Adam H, **Dvornek N**, Tatikonda S, Duncan J, Liu T. Surrogate Gap Minimization Improves Sharpness-Aware Training. International Conference on Learning Representations. 2022.
32. Guo X, Zhou B, Pigg D, Spottiswoode B, Casey ME, Liu C, **Dvornek NC**. Unsupervised inter-frame motion correction for whole-body dynamic PET using convolutional long short-term memory in a convolutional neural network. Medical Image Analysis. 2022;80:102524. Epub 20220625. doi: 10.1016/j.media.2022.102524. PMID: 35797734; PMCID: PMC10923189.
33. Guo X, Tinaz S, **Dvornek NC**. Characterization of Early Stage Parkinson's Disease From Resting-State fMRI Data Using a Long Short-Term Memory Network. Frontiers in Neuroimaging. 2022;1. Epub 20220713. doi: 10.3389/fnimg.2022.952084. PMID: 37555151; PMCID: PMC10406199.
34. Guo X, Zhou B, Chen X, Liu C, **Dvornek N**. MCP-Net: Inter-frame Motion Correction with Patlak Regularization for Whole-body Dynamic PET. Med Image Comput Comput Assist Interv. 2022; 13434: 163–172. Epub 20220916. doi: 10.1007/978-3-031-16440-8_16. PMID: 38464686; PMCID: PMC10923180.
35. Guo X, Wu J, Chen MK, Liu Q, Onofrey JA, Pucar D, Pang Y, Pigg D, Casey ME, **Dvornek NC**, Liu C. Inter-Pass Motion Correction for Whole-Body Dynamic PET and Parametric Imaging. IEEE Transactions on Radiation and Plasma Medical Sciences. 2022;7(4):344-353. Epub 22021208. doi: 10.1109/TRPMS.2022.3227576. PMID: 37842204; PMCID: PMC10569406.
36. Peng L, Wang N, **Dvornek N**, Zhu X, Li X. FedNI: Federated Graph Learning with Network Inpainting for Population-Based Disease Prediction. IEEE Transactions on Medical Imaging. 2023;42(7):2032-2043. Epub 20220705. doi:10.1109/TMI.2022.3188728. PMID: 35788451.
37. Guo X, Zhou B, Chen X, Chen MK, Liu C, **Dvornek NC**. MCP-Net: Introducing Patlak Loss Optimization to Whole-body Dynamic PET Inter-frame Motion Correction. IEEE Trans Med Imaging. 2023;42(12):3512-3523. Epub 20230627. doi: 10.1109/TMI.2023.3290003. PMID: 37368811; PMCID: PMC10751388.
38. Du Y, Hooley RJ, Lewin J, **Dvornek NC**. Sift-dbt: Self-supervised Initialization and Fine-tuning for Imbalanced Digital Breast Tomosynthesis Image Classification. Proc IEEE Int Symp Biomed Imaging. 2024 May;2024. doi: 10.1109/ISBI56570.2024.10635723. Epub 2024 Aug 22. PMID: 39263046; PMCID: PMC11386909.
39. Duan P, **Dvornek NC**, Wang J, Eilbott J, Du Y, Sukhodolsky DG, Duncan JS. Spectral brain graph neural network for prediction of anxiety in children with Autism Spectrum Disorder. Proc IEEE Int Symp Biomed Imaging. 2024 May;2024. doi: 10.1109/ISBI56570.2024.10635753. Epub 2024 Aug 22. PMID: 39697611; PMCID: PMC11655121.
40. Guo X, Shi L, Chen X, Liu Q, Zhou B, Xie H, Liu YH, Palyo R, Miller EJ, Sinusas AJ, Staib L, Spottiswoode B, Liu C, **Dvornek NC**. TAI-GAN: A Temporally and Anatomically Informed Generative Adversarial Network for early-to-late frame conversion in dynamic cardiac PET inter-frame motion correction. Med Image Anal. 2024 Aug;96:103190. doi: 10.1016/j.media.2024.103190. Epub 2024 May 7. PMID: 38820677; PMCID: PMC11180595.
41. Du Y, Chang B, **Dvornek NC**. CLEFT: Language-Image Contrastive Learning with Efficient Large Language Model and Prompt Fine-Tuning. Med Image Comput Comput Assist Interv. 2024 Oct;15012:465-475. doi: 10.1007/978-3-031-72390-2_44. Epub 2024 Oct 23. PMID: 39791126; PMCID: PMC11709740.
42. You C, Dai W, Liu F, Min Y, **Dvornek NC**, Li X, Clifton DA, Staib L, Duncan JS. Mine your own anatomy: Revisiting medical image segmentation with extremely limited labels. IEEE Transactions on Pattern Analysis and Machine Intelligence. 2024;46(12):11136-11151. Epub 20240913. doi: 10.1109/TPAMI.2024.3461321. PMID: 39269798. PMCID: PMC11903367.

43. Zhou Y, Chen T, Hou J, Xie H, **Dvornek NC**, Zhou SK, Wilson DL, Duncan JS, Liu C, Zhou B. Cascaded Multi-path Shortcut Diffusion Model for Medical Image Translation. Med Image Anal. 2024 Dec;98:103300. doi: 10.1016/j.media.2024.103300. Epub 2024 Aug 13. PMID: 39226710. PMCID: PMC11979896.
44. Yang J, Henao JAG, **Dvornek N**, He J, Bower DV, Depotter A, Bajercius H, de Mortanges AP, You C, Gange C, Ledda RE, Silva M, Dela Cruz CS, Hautz W, Bonel HM, Reyes M, Staib LH, Poellinger A, Duncan JS. Prior knowledge-guided vision-transformer-based unsupervised domain adaptation for intubation prediction in lung disease at one week. Comput Med Imaging Graph. 2024 Dec;118:102442. doi: 10.1016/j.compmedimag.2024.102442. Epub 2024 Oct 15. PMID: 39515190.
45. Foster ML, Ye J, Powers AR, **Dvornek NC**, Scheinost D. Connectome-based predictive modeling of early and chronic psychosis symptoms. Neuropsychopharmacology. 2025 May;50(6):877-885. doi: 10.1038/s41386-025-02064-9. Epub 2025 Feb 27. PMID: 40016363; PMCID: PMC12032145.
46. Cai Z, Xin J, You C, Shi P, Dong S, **Dvornek NC**, Zheng N, Duncan JS. Style mixup enhanced disentanglement learning for unsupervised domain adaptation in medical image segmentation. Med Image Anal. 2025 Apr;101:103440. doi: 10.1016/j.media.2024.103440. Epub 2024 Dec 30. PMID: 39764933.
47. Du Y, Zhang J, Zeevi T, **Dvornek NC**, Onofrey JA. SRE-Conv: Symmetric Rotation Equivariant Convolution for Biomedical Image Classification. Proc IEEE Int Symp Biomed Imaging. 2025 Apr;2025. doi: 10.1109/ISBI60581.2025.10981270. Epub 2025 May 12.
48. Zhang J, Du Y, **Dvornek NC**, Onofrey JA. Improved Vessel Segmentation with Symmetric Rotation-Equivariant U-Net. Proc IEEE Int Symp Biomed Imaging. 2025 Apr;2025. doi: 10.1109/ISBI60581.2025.10981208. Epub 2025 May 12
49. Wang J, **Dvornek NC**, Duan P, Staib LH, Duncan J. Towards Zero-Shot Task-Generalizable Learning on fMRI. Proc IEEE Int Symp Biomed Imaging. 2025 Apr;2025. doi: 10.1109/ISBI60581.2025.10981094.
50. Duan P, **Dvornek NC**, Wang J, Staib LH, Duncan J. Causal Modeling of fMRI Time-Series for Interpretable Autism Spectrum Disorder Classification. Proc IEEE Int Symp Biomed Imaging. 2025 Apr;2025. doi: 10.1109/ISBI60581.2025.10980933.
51. Du Y, Onofrey J, **Dvornek NC**. Multi-View and Multi-Scale Alignment for Contrastive Language-Image Pre-training in Mammography. Information Processing in Medical Imaging. 2025;15830:247-62. doi: 10.1007/978-3-031-96625-5_17. Epub 2025 Aug 07. NIHMSID: 2110808.
52. Lin M, Holste G, Wang S, Zhou Y, Wei Y, Banerjee I, Chen P, Dai T, Du Y, **Dvornek NC**, Ge Y, Guo Z, Hanaoka S, Kim D, Messina P, Lu Y, Parra D, Son D, Soto Á, Urooj A, Vidal R, Yamagishi Y, Yan P, Yang Z, Zhang R, Zhou Y, Celi LA, Summers RM, Lu Z, Chen H, Flanders A, Shih G, Wang Z, Peng Y. CXR-LT 2024: A MICCAI challenge on long-tailed, multi-label, and zero-shot disease classification from chest X-ray. Med Image Anal. 2025 Dec;106:103739. doi: 10.1016/j.media.2025.103739. Epub 2025 Jul 29. PMID: 40795541; PMCID: PMC12396843.

Other Full-length Conference/Workshop Articles

(All also appear under Peer-Reviewed Presentations)

53. **Chitphakdithai N**, Chiang VL, Duncan JS. Non-rigid registration of longitudinal brain tumor treatment MRI. Annu Int Conf IEEE Eng Med Biol Soc. 2011;2011:4893-6. doi: 10.1109/IEMBS.2011.6091212. PMID: 22255435; PMCID: PMC3753806.
54. **Chitphakdithai N**, Chiang VL, Duncan JS. Tracking Metastatic Brain Tumors in Longitudinal Scans via Joint Image Registration and Labeling. Spatiotemporal Image Anal Longitud Time Ser Image Data (2012). 2012;7570:124-36. doi: 10.1007/978-3-642-33555-6_11. PMID: 31187098; PMCID: PMC6559745.
55. **Dvornek NC**, Yang D, Venkataraman A, Ventola P, Staib LH, Pelphrey KA, Duncan JS. Prediction of autism treatment response from baseline fmri using random forests and tree bagging. Workshop on Multimodal Learning for Clinical Decision Support. 2016.
56. **Dvornek NC**, Ventola P, Pelphrey KA, Duncan JS. Identifying Autism from Resting-State fMRI Using Long Short-Term Memory Networks. Mach Learn Med Imaging. 2017;10541:362-70. Epub 20170907. doi: 10.1007/978-3-319-67389-9_42. PMID: 29104967; PMCID: PMC5669262.

57. Zhuang J, **Dvornek NC**, Li X, Ventola P, Duncan JS. Prediction of severity and treatment outcome for ASD from fMRI. Predict Intell Med. 2018;11121:9-17. Epub 20180913. doi: 10.1007/978-3-030-00320-3_2. PMID: 32984867; PMCID: PMC7513883.
58. Yang J, **Dvornek NC**, Zhang F, Zhuang J, Chapiro J, Lin M, Duncan JS. Domain-Agnostic Learning with Anatomy-Consistent Embedding for Cross-Modality Liver Segmentation. IEEE Int Conf Comput Vis Workshops. 2019;2019. Epub 20200305. doi: 10.1109/iccvw.2019.00043. PMID: 34676308; PMCID: PMC8528125.
59. Zhuang J, **Dvornek NC**, Li X, Yang J, Duncan JS. Decision Explanation and Feature Importance for Invertible Networks. IEEE Int Conf Comput Vis Workshops. 2019;2019:4235-9. Epub 20200305. doi: 10.1109/iccvw.2019.00521. PMID: 33024924; PMCID: PMC7535108.
60. Zhuang J, Yang J, Gu L, **Dvornek N**. Shelfnet for fast semantic segmentation. IEEE Int Conf Comput Vis Workshops 2019;2019: 847-56. Epub 20200305. doi: 10.1109/ICCVW.2019.00113.
61. **Dvornek NC**, Li X, Zhuang J, Duncan JS. Jointly Discriminative and Generative Recurrent Neural Networks for Learning from fMRI. Mach Learn Med Imaging. 2019;11861:382-90. Epub 20191010. doi: 10.1007/978-3-030-32692-0_44. PMID: 32274470; PMCID: PMC7143657.
62. **Dvornek NC**, Li X, Zhuang J, Ventola P, Duncan JS. Demographic-Guided Attention in Recurrent Neural Networks for Modeling Neuropathophysiological Heterogeneity. Mach Learn Med Imaging. 2020;12436:363-72. Epub 20200929. doi: 10.1007/978-3-030-59861-7_37. PMID: 34308438; PMCID: PMC8299434.
63. Yang, J, Li, X, Pak, D, **Dvornek, N**, Chapiro, J, Lin, M, Duncan, J. Cross-Modality Segmentation by Self-Supervised Semantic Alignment in Disentangled Content Space. Domain Adaptation and Representation Transfer. 2020;12444:52-61.
64. **Dvornek NC**, Sullivan C, Duncan JS, Gupta AR. Copy Number Variation Informs fMRI-based Prediction of Autism Spectrum Disorder. Mach Learn Clin Neuroimaging (2023). 2023 Oct;14312:133-142. doi: 10.1007/978-3-031-44858-4_13. Epub 20231001. PMID: 38371906; PMCID: PMC10868600.
65. Wang J, **Dvornek NC**, Staib LH, Duncan JS. Learning Sequential Information in Task-Based fMRI for Synthetic Data Augmentation. Mach Learn Clin Neuroimaging (2023). 2023 Oct;14312:79-88. doi: 0.1007/978-3-031-44858-4_8. Epub 20231001. PMID: 39281201; PMCID: PMC11395879.
66. Guo X, Shi L, Chen X, Zhou B, Liu Q, Xie H, Liu YH, Palyo R, Miller EJ, Sinusas AJ, Spottiswoode B, Liu C, **Dvornek NC**. TAI-GAN: Temporally and Anatomically Informed GAN for Early-to-Late Frame Conversion in Dynamic Cardiac PET Motion Correction. Simul Synth Med Imaging. 2023 Oct;14288:64-74. doi: 10.1007/978-3-031-44689-4_7. Epub 20231007. PMID: 38464964; PMCID: PMC10923183.
67. Zhou Y, Duan P, Du Y, **Dvornek NC**. Self-Supervised Pre-training Tasks for an fMRI Time-series Transformer in Autism Detection. Mach Learn Clin Neuroimaging. 2024. doi: 10.1007/978-3-031-78761-4_14. Epub 20241206. PMID: 40160559; PMCID: PMC11951341.
68. Wang J, **Dvornek NC**, Duan P, Staib LH, Ventola P, Duncan JS. STNAGNN: Data-driven Spatio-temporal Brain Connectivity beyond FC. Medical Imaging with Deep Learning. 2025. Epub 2025 May 10.
69. Chen F, Du Y, Zeevi T, **Dvornek NC**, Onofrey JA. Equivariant Imaging Biomarkers for Robust Unsupervised Segmentation of Histopathology. Medical Imaging with Deep Learning 2025. Epub 2025 May 30.

Peer-Reviewed Original Research In Press

1. Du Y, Chen L, **Dvornek NC**. Geometry-Guided Local Alignment for Multi-View Visual Language Pre-Training in Mammography. Med Image Comput Comput Assist Interv. 2025. (Accepted 20250617).

Books

1. Abdulkadir A, Bathula DR, **Dvornek NC**, Habes M, Kia SM, Kumar V, Wolfers T, editors. Machine Learning in Clinical Neuroimaging: 5th International Workshop, MLCN 2022. Switzerland: Springer Cham; 2022.

2. Abdulkadir A, Bathula DR, **Dvornek NC**, Govindarajan ST, Habes M, Kumar V, Leonardsen E, Wolfers T, Xiao Y, editors. Machine Learning in Clinical Neuroimaging: 6th International Workshop, MLCN 2023. Switzerland: Springer Cham; 2023.
3. Bathula DR, Nirmala AB, **Dvornek NC**, Govindarajan ST, Habes M, Kumar V, Nebli A, Wolfers T, Xiao Y, editors. Machine Learning in Clinical Neuroimaging: 7th International Workshop, MLCN 2024. Switzerland: Springer Cham; 2024.

Chapters

1. **Dvornek NC**, Li X. Deep learning with connectomes. In: Schirmer MD, Arichi T, Wern A, editors. Connectome Analysis: Characterization, Methods, and Analysis. Academic Press. 2023; p. 289-308.
2. Duncan J, Staib LH, **Dvornek N**, Li X, Zhuang J, Wang J, Ventola P. Data-driven learning strategies for biomarker detection and outcome prediction in Autism from task-based fMRI. In: Zhou KS, Greenspan H, Shen D, editors. Deep Learning for Medical Image Analysis, 2nd Edition. Academic Press. 2024; p. 357-393.