

Dave Van Veen

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EDUCATION	Stanford University - Ph.D. in Electrical Engineering	2021 – Present
	▪ <u>Focus</u> : Machine learning, computational imaging	
	University of Texas - M.S. in Electrical Engineering	2017 – 2019
	▪ <u>Focus</u> : Machine learning, compressed sensing	
	▪ <u>Advisors</u> : Alexandros Dimakis, Sriram Vishwanath	
	▪ <u>Thesis</u> : Compressed sensing recovery with unsupervised neural networks	
	▪ <u>GPA</u> : 3.8 / 4.0	
	University of Wisconsin - B.S. in Electrical Engineering	2012 – 2016
	▪ <u>Advisor</u> : John Booske	
	▪ <u>GPA</u> : 3.9 / 4.0	
EXPERIENCE	Machine Learning Research Scientist , Subtle Medical Menlo Park, CA	2019 – 2021
	▪ Develop real-time video denoising algorithms for clinical deployment	
	Research Scientist , Stanford University Stanford, CA	2020 – 2021
	▪ Developed unsupervised machine learning methods for MRI reconstruction	
	Research Fellow , Data Science for Social Good London, UK	2019
	▪ Built a machine learning pipeline to analyze echocardiograms and collaborated with cardiologists to streamline clinical workflow	
	Graduate Research Asst. , University of Texas Austin, TX	2017 – 2019
	▪ Developed machine learning algorithms for compressed sensing recovery	
	President + Co-founder , Badgerloop Madison, WI	2015 – 2017
	▪ Created and led 150-person organization for SpaceX competition	
	Research Intern , QBE Digital Innovation Lab Madison, WI	2017
	Electrical Engr. + Project Mgmt. Intern , Boeing Seattle, WA	2016
	Aquatics Supervisor , City of Madison Madison, WI	2014 – 2015
	▪ Hired and supervised 100+ employees. Managed budget of \$250K	
	Undergraduate Research Asst. , UW-Madison BME Dept. Madison, WI	2013 – 2014
	▪ Performed statistical analysis on cellular biomechanic experiments	

PUBLICATIONS CONFERENCES

- [C5] D. Van Veen, B. Duffy, L. Wang, K. Datta, T. Zhang, G. Zaharchuk, E. Gong, “Real-Time Video Denoising to Reduce Ionizing Radiation Exposure in Fluoroscopic Imaging,” in *Medical Image Computing and Computer Assisted Intervention (MICCAI) - Machine Learning for Medical Imaging Reconstruction (MLMIR) Workshop (Spotlight)*, Virtual, 2021.
- [C4] D. Van Veen and A. Desai, and R. Heckel, and A. S. Chaudhari, “Using Untrained Convolutional Neural Networks to Accelerate MRI in 2D and 3D,” in *The International Society for Magnetic Resonance in Medicine (ISMRM)*, Virtual, 2021.
- [C3] W. Toussaint, D. Van Veen, C. Irwin, Y. Nachmany, et al., “Design Considerations for High Impact, Automated Echocardiogram Analysis,” in *International Conference of Machine Learning (ICML) - Global Health Workshop*, Virtual, 2020.

- [C2] K. Slavkova, J. C. DiCarlo, D. Van Veen, A. K. Syed, A. Jalal, J. Virostko, A. G. Sorace, A. G. Dimakis, T. E. Yankeelov, "Implementing Compressed Sensing with Deep Image Prior to Reconstruct Undersampled Dynamic Contrast-Enhanced MRI Data of the Breast," in *The International Society for Magnetic Resonance in Medicine (ISMRM)*, Virtual, 2020.
- [C1] D. Van Veen, A. Jalal, E. Price, S. Vishwanath, A. G. Dimakis, "Compressed Sensing Recovery of Medical Images using Deep Image Prior," in *Neural Information Processing Systems (NeurIPS) - Med-NeurIPS Workshop*, Montreal, Canada, 2018.

PRE-PRINTS

- [P2] D. B. Lindell, D. Van Veen, J. J. Park, G. Wetzstein, "BACON: Band-Limited Coordinate Networks for Multiscale Scene Representation," in *arXiv preprint arXiv:2112.04645*, 2021.
- [P1] D. Van Veen, A. Jalal, M. Soltanolkotabi, E. Price, S. Vishwanath, A. G. Dimakis, "Compressed Sensing with Deep Image Prior and Learned Regularization," in *arXiv preprint arXiv:1806.06438*, 2020.

PATENTS

- [2] E. Gong, B. Duffy, K. Datta, D. Van Veen, "Systems and Methods for Real-Time Video Denoising," pending, submitted 2021.
- [1] D. Van Veen, L. Wang, T. Zhang, E. Gong, B. Duffy, "Systems and Methods for Real-Time Video Enhancement," Patent no. WO2021163022, 2019.

GRANTS

- [2] D. Van Veen, E. Gong, G. Zaharchuk, E. Carragee, B. Duffy, "Real-time AI-enhanced Low Dose Fluoroscopy," National Institute of Health (NIH) Small Business Innovation Research (SBIR) Award FOA PA-20-260, 2021.
- [1] S. Vishwanath, D. Van Veen, J. Tamir, et al., "Adaptive Machine Learning Techniques for Signal Identification, Classification, and Recovery," Office of Naval Research, Award N00014-19-1-2590, 2019.

AWARDS & HONORS

- Google's Distinguished Poster Award, SCIEN Meeting 2021
- Data Science for Social Good Fellow 2019
- Badgerloop 2015-2017
 - SpaceX Hyperloop Competition: Innovation Award
 - University of Wisconsin Dean's Excellence Award
 - SpaceX Hyperloop Competition: 3rd place in design (1800 entries)
- University of Wisconsin 2012-2016
 - Innovative Signal Analysis Award
 - Academic Excellence Scholarship, State of Wisconsin
 - Merit Scholarship, Electrical and Computer Engineering Dept.
 - Merit Scholarship, Biomedical Engineering Dept.
- Valedictorian, McFarland High School 2012

INVITED TALKS

- "Signal Reconstruction with Unsupervised Neural Networks," Data Days Mexico, Virtual, 2020.
- "Inverse Problems with Generative Models," UC - Berkeley's Computational Imaging Group, Berkeley, CA, 2019.
- "Increasing the Efficiency of Heart Diagnosis with Machine Learning," University of Salamanca Hospital, Salamanca, Spain, 2019.