

Dave Van Veen

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| EDUCATION | Stanford University - Ph.D. in Electrical Engineering 2021 – Present <ul style="list-style-type: none">▪ <u>Focus</u>: Machine learning, computational imaging |
| | University of Texas - M.S. in Electrical Engineering 2017 – 2019 <ul style="list-style-type: none">▪ <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 <ul style="list-style-type: none">▪ <u>Advisor</u>: John Booske▪ <u>GPA</u>: 3.9 / 4.0 |
| EXPERIENCE | Machine Learning Research Scientist , Subtle Medical Menlo Park, CA 2019 – 2021 <ul style="list-style-type: none">▪ Develop real-time video denoising algorithms for clinical deployment |
| | Research Scientist , Stanford University Stanford, CA 2020 – 2021 <ul style="list-style-type: none">▪ Developed unsupervised machine learning methods for MRI reconstruction |
| | Research Fellow , Data Science for Social Good London, UK 2019 <ul style="list-style-type: none">▪ 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 <ul style="list-style-type: none">▪ Developed machine learning algorithms for compressed sensing recovery |
| | President + Co-founder , Badgerloop Madison, WI 2015 – 2017 <ul style="list-style-type: none">▪ 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 <ul style="list-style-type: none">▪ Hired and supervised 100+ employees. Managed budget of \$250K |
| | Undergraduate Research Asst. , UW-Madison BME Dept. Madison, WI 2013 – 2014 <ul style="list-style-type: none">▪ Performed statistical analysis on cellular biomechanic experiments |

PUBLICATIONS CONFERENCES

- [C7] D. Van Veen and R. van der Sluijs and B. Ozturkler and A. Desai and C. Bluethgen and R. Boutin and M. Willis and G. Wetzstein and D. Lindell and S. Vasanawala and J. Pauly and A. S. Chaudhari, “Scale-Agnostic Super-Resolution in MRI using Feature-Based Coordinate Networks” in *Medical Imaging with Deep Learning (MIDL)* (short), Zurich, Switzerland, 2022.
- [C6] D. Lindell and D. Van Veen and J.J. Park and G. Wetzstein, “BACON: Band-limited coordinate networks for multiscale scene representation” in *Conference on Computer Vision and Pattern Recognition (CVPR)* (Oral), New Orleans, LA, 2022.
- [C6] D. Lindell and D. Van Veen and J.J. Park and G. Wetzstein, “BACON: Band-limited coordinate networks for multiscale scene representation” in *Conference on Computer Vision and Pattern Recognition (CVPR)* (Oral), New Orleans, LA, 2022.

- [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

- [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.