

Hoda Hashemi

Postdoctoral Scholar, Radiological Sciences Laboratory

Bio

BIO

Hoda S. Hashemi is a postdoctoral scholar at the Ultrasound Imaging & Instrumentation Lab at Stanford University. She received her PhD in Electrical and Computer Engineering from the University of British Columbia (UBC) in 2023. She was also an ultrasound research intern in research and innovation team at DarkVision Technologies Inc. from 2021 to 2023. She holds a M.A.Sc. from Concordia University and a B.Sc. from Sharif University of Technology. Her research interests are ultrasound molecular imaging, elastography and AI in medical image processing. Her research has been funded by the NIH T32 Fellowship at Stanford, the Canadian NSERC Postdoctoral Fellowship, and the Ultrasound Imaging & Instrumentation Lab at Stanford University.

HONORS AND AWARDS

- NIH T32 (SCIT) Fellowship, Stanford University (2024-2025)
- NSERC Postdoctoral Fellowship, Natural Sciences and Engineering Research Council of Canada (2024-2025)
- President's Academic Excellence Award, The University of British Columbia (2020-2023)
- Faculty of Applied Science Graduate Award, The University of British Columbia (2017-2023)
- Four Year Fellowship (4YF) Award, The University of British Columbia (2017-2021)
- ECE MASc. Convocation Award (Best MSc. student), Concordia University (2018)
- Power Corporation Of Canada Scholarship, Concordia University (2016-2017)
- The Clara Strozyk Scholarship, Concordia University (2015-2016)

PROFESSIONAL EDUCATION

- Doctor of Philosophy, University of British Columbia , Electrical and Computer Engineering (2023)
- Master of Applied Science, Concordia University , Electrical and Computer Engineering (2017)
- Bachelor of Science, Sharif University of Technology , Electrical and Computer Engineering (2014)

STANFORD ADVISORS

- Jeremy Dahl, Postdoctoral Faculty Sponsor

Publications

PUBLICATIONS

- **Lens-Aware Differentiable Beamforming for In Vivo Distributed Aberration Correction with Curvilinear Transducers.** *ArXiv*
Frey, B. N., van Velzen, R., Hashemi, H. S., Beuret, S., Schneider, M., Fan, A. C., Hoerner, C. R., Kamaya, A., Sanabria, S. J., Dahl, J. J.
2026
- **Real-Time Reverberation Suppression in Ultrasound Channel Signals Using a Permuted 2D Convolutional Neural Network.** *Ultrasonic imaging*
Brickson, L. L., Hyun, D., Hashemi, H. S., Simson, W. A., Antil, N., Pinton, G., Dahl, J. J.

2026: 1617346261467350

- **Enhancing Ultrasound Molecular Imaging: Toward Real-Time RPCA-Based Filtering to Differentiate Bound and Free Microbubbles** *IEEE TRANSACTIONS ON ULTRASONICS*
Hashemi, H. S., Hyun, D., Nguyen, N., Baek, J., Natarajan, A., Tabesh, F., Andrzejek, A., Paulmurugan, R., Dahl, J. J.
2026; 73 (2): 183-193
- **Real-Time Convolutional Neural Network for Nondestructive Detection of Targeted Microbubbles in Ultrasound Molecular Imaging**
Hashemi, H. S., Nguyen, N., Baek, J., Abdullah, R., Natarajan, A., Tabesh, F., Hyun, D., Paulmurugan, R., Dahl, J. J.
edited by Boehm, C., Mehrmohammadi, M., Xiang, S. L.
SPIE-INT SOC OPTICAL ENGINEERING.2026
- **Enhancing Ultrasound Molecular Imaging: Toward Real-Time RPCA-Based Filtering to Differentiate Bound and Free Microbubbles.** *IEEE transactions on ultrasonics*
Hashemi, H. S., Hyun, D., Nguyen, N., Baek, J., Natarajan, A., Tabesh, F., Andrzejek, A., Paulmurugan, R., Dahl, J. J.
2025
- **UltraFlex: Iterative Model-Based Ultrasonic Flexible-Array Shape Calibration** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
Frey, B. N., Hyun, D., Simson, W., Zhuang, L., Hashemi, H. S., Schneider, M., Dahl, J. J.
2025; 72 (11): 1462-1475
- **MBFormer: A Transformer model for 3D Time-Series Data Processing to Improve Bound Bubble Detection in Nondestructive Ultrasound Molecular Imaging**
Baek, J., Lee, J., Hashemi, H. S., Natarajan, A., Tabesh, F., Paulmurugan, R., Dahl, J. J., IEEE
IEEE.2025
- **Ultrasound Molecular Imaging: A Quantitative Metric for Vascular-Independent Targeted Microbubble Binding**
Hashemi, H. S., Baek, J., Nguyen, N., Natarajan, A., Tabesh, F., Paulmurugan, R., Dahl, J. J., IEEE
IEEE.2025
- **Enhancing Ultrasound Molecular Imaging: RPCA-Based Filtering to Differentiate Tumor-Bound and Free Microbubbles**
Hashemi, H. S., Hyun, D., Baek, J., Natarajan, A., Tabesh, F., Paulmurugan, R., Dahl, J. J., IEEE
IEEE.2024
- **Ultrafast 3-D Photoacoustic System Development using a Matrix Array Transducer**
Moradi, H., Hashemi, H., Vousten, V., Rohling, R., Salcudean, S.
edited by Oraevsky, A. A., Wang, L. V.
SPIE-INT SOC OPTICAL ENGINEERING.2024
- **3-D Ultrafast Shear Wave Absolute Vibro-Elastography Using a Matrix Array Transducer** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
Hashemi, H. S., Mohammed, S. K., Zeng, Q., Azar, R., Rohling, R. N., Salcudean, S. E.
2023; 70 (9): 1039-1053
- **Real-Time 3D Ultrafast Shear Wave Absolute Vibro-Elastography**
Hashemi, H. S., Mohammed, S. K., Azar, R., Rohling, R. N., Salcudean, S. E.
edited by Boehm, C., Bottenus, N.
SPIE-INT SOC OPTICAL ENGINEERING.2023
- **Model-Based Quantitative Elasticity Reconstruction Using ADMM** *IEEE TRANSACTIONS ON MEDICAL IMAGING*
Mohammed, S., Honarvar, M., Zeng, Q., Hashemi, H., Rohling, R., Kozlowski, P., Salcudean, S.
2022; 41 (11): 3039-3052
- **Breast Cancer Detection Using Multimodal Time Series Features From Ultrasound Shear Wave Absolute Vibro-Elastography** *IEEE JOURNAL OF BIOMEDICAL AND HEALTH INFORMATICS*
Shao, Y., Hashemi, H. S., Gordon, P., Warren, L., Wang, J., Rohling, R., Salcudean, S.
2022; 26 (2): 704-714
- **3D Global Time-Delay Estimation for Shear-Wave Absolute Vibro-Elastography of the Placenta**
Hashemi, H. S., Honarvar, M., Salcudean, T., Rohling, R., IEEE

IEEE.2020: 2079-2083

- **Assessment of Mechanical Properties of Tissue in Breast Cancer-Related Lymphedema Using Ultrasound Elastography** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
Hashemi, H. S., Fallone, S., Boily, M., Towers, A., Kilgour, R. D., Rivaz, H.
2019; 66 (3): 541-550
- **HIGH-DYNAMIC-RANGE ULTRASOUND: APPLICATION FOR IMAGING TENDON PATHOLOGY** *ULTRASOUND IN MEDICINE AND BIOLOGY*
Xiao, Y., Boily, M., Hashemi, H., Rivaz, H.
2018; 44 (7): 1525-1532
- **ULTRASOUND ELASTOGRAPHY OF BREAST CANCER-RELATED LYMPHEDEMA**
Hashemi, H. S., Fallone, S., Boily, M., Towers, A., Kilgour, R. D., Rivaz, H., IEEE
IEEE.2018: 1491-1495
- **Global Time-Delay Estimation in Ultrasound Elastography** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
Hashemi, H., Rivaz, H.
2017; 64 (10): 1625-1636
- **Ultrasound Elastography: Efficient Estimation of Tissue Displacement Using an Affine Transformation Model**
Hashemi, H., Boily, M., Martineau, P. A., Rivaz, H.
edited by Duric, N., Heyde, B.
SPIE-INT SOC OPTICAL ENGINEERING.2017