JOHANNA HANSEN

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EDUCATION

McGill University, Montreal, QC *2016 – 2022*
Ph.D. in Computer Science (expected), Mobile Robotics Lab
Learning Robotic Policies with Physically Consistent World Models

University of Texas at San Antonio, San Antonio, TX *2012 – 2015*
Graduate coursework (30 hours) in Electrical Engineering, Digital Signal Processing

Texas State University, San Marcos, TX *2007 – 2011*
B.S. in Electrical Engineering and B.S. in Environmental Geography

TECHNICAL SKILLS

Expertise: Robotics, Machine/Reinforcement Learning, Perception, Sensing, Environmental Science
Software: Scientific Python, Physics Simulation, ROS, C, Matlab

EXPERIENCE

McGill University Jan 2016–current
Graduate Researcher, Mobile Robotics Lab / Mila *Montreal, QC*

· Model-based planning and reinforcement learning with physics-grounded, learned world models.

Samsung AI Center (SAIC) Jan 2021-current
Part-Time Research Intern, Tactile Sensing Group *Montreal, QC*

· Pixel-based multitask learning with visuotactile-based grounding for complex manipulation tasks.

NASA Jet Propulsion Lab (JPL) Summer 2019
Research Intern and Remote Affiliate, Mobility and Robotics Section *Pasadena, CA*

· Developed SOTA geometric and direct object localization methods for Mars Sample Return Mission.

Woods Hole Oceanographic Institution (WHOI) Jan 2014 – Sept 2015
Autonomous Underwater Vehicle Engineer, National Deep Submergence Facility *Woods Hole, MA*

· Software/Data/Electrical Engineer for deep-diving autonomous underwater vehicles (AUVs) working in research and ship-board operational environments in scientific instrumentation and visualization.

Southwest Research Institute (SwRI) Jan 2012 – Dec 2013
Engineer, Automation and Data Systems Division *San Antonio, TX*

· Primary software engineer building a new live acoustic/visual mapping sensor for inspecting conduits.

SELECTED ACADEMIC PAPERS

Hansen, J.*, Kastner, K.*, Huang, Y., Courville, A., Meger, D., Dudek, G., *Learning to Manipulate from Pixels on Rigid Body Robots with a Kinematic Critic*, (under review), 2022

Hansen, J., Hogan, F., Rivkin, D., Meger, D., Jenkin, M., Dudek, G., *Visuotactile-RL: Learning Multimodal Manipulation Policies with Deep Reinforcement Learning*, ICRA, 2022

Hansen, J., Manjanna, S., Quattrini, L. A., Rekleitis, I., Dudek, G., *Autonomous Marine Sampling Enhanced by Strategically Deployed Drifters*, IEEE OCEANS, 2018, *(Top 20 Student Submission).*

Hansen, J., Dudek, G., *Coverage Optimization with Non-Actuated, Floating Mobile Sensors using Iterative Trajectory Planning in Marine Flow Fields*, IEEE International Conference on Intelligent Robots (IROS), 2018.

Hansen, J.*, Kastner, K.*, Courville, A., Dudek, G., *Planning in Dynamic Environments with Conditional Autoregressive Models*, International Conference on Machine Learning (ICML), workshop on Prediction and Generative Modeling in Reinforcement Learning, 2018.