

JOHANNA HANSEN

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EDUCATION

McGill University, Montreal, QC Ph.D. in Computer Science, Mobile Robotics Lab Learning Robotic Policies with Physically Consistent World Models	<i>2016 – 2022</i>
University of Texas at San Antonio, San Antonio, TX Graduate coursework (30 hours) in Electrical Engineering, Digital Signal Processing	<i>2012 – 2015</i>
Texas State University, San Marcos, TX B.S. in Electrical Engineering and B.S. in Environmental Geography	<i>2007 – 2011</i>

TECHNICAL SKILLS

Expertise: Robotics, Machine Learning, Reinforcement Learning, Perception, Mapping, Sensing
Software: Scientific Python, PyTorch, Physics Simulation, ROS, C, Matlab

EXPERIENCE

McGill University <i>Graduate Researcher, Mobile Robotics Lab / Mila</i>	Jan 2016–current <i>Montreal, QC</i>
· Model-based planning and reinforcement learning with physics-grounded, learned world models.	
Samsung AI Center (SAIC) <i>Part-Time Research Intern, Tactile Sensing Group</i>	Jan 2021–current <i>Montreal, QC</i>
· Pixel-based multitask learning with visuotactile-based grounding for complex manipulation tasks.	
NASA Jet Propulsion Lab (JPL) <i>Research Intern and Remote Affiliate, Mobility and Robotics Section</i>	Summer 2019 <i>Pasadena, CA</i>
· Implemented SOTA geometric and direct object localization methods for Mars Sample Return Mission.	
Woods Hole Oceanographic Institution (WHOI) <i>Autonomous Underwater Vehicle Engineer, National Deep Submergence Facility</i>	Jan 2014 – Sept 2015 <i>Woods Hole, MA</i>
· Software 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) <i>Engineer, Automation and Data Systems Division</i>	Jan 2012 – Dec 2013 <i>San Antonio, TX</i>
· 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.***, Kastner, K.*, Courville, A., Dudek, G., *Planning in Dynamic Environments with Conditional Autoregressive Models*, ICML, workshop on Prediction and Generative Modeling in Reinforcement Learning, 2018.
- 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 Paper*).
- Hansen, J.**, Dudek, G., *Coverage Optimization with Non-Actuated, Floating Mobile Sensors using Iterative Trajectory Planning in Marine Flow Fields*, IEEE IROS, 2018.