

# Christopher T. Morse

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PROFESSIONAL SUMMARY	Curious and motivated early career professional with specialized knowledge in the intersection of software engineering, machine learning, and robotics. Skilled researcher and presenter with a history of publications and awards. Extends perspective through cross-disciplinary collaboration. Resourceful problem solver with an M.S. in Computer Science initiating career in software or data science.	
EDUCATION	<b>University of Virginia</b> <i>M.S. in Computer Science</i> GPA: 4.00 / 4.00	Charlottesville, VA May 2023
	<b>University of Minnesota – Twin Cities</b> <i>B.A. in Computer Science, Minor in Music</i> GPA: 3.91 / 4.00	Minneapolis, MN May 2021
WORK EXPERIENCE	<b>Teaching Assistant, University of Virginia</b> <i>CS 1010: Introduction to Information Technology</i> <i>CS 4501: Robotics for Software Engineers</i> <ul style="list-style-type: none"><li>Designed and led engaging laboratory sections for 50+ students.</li><li>Created final projects and associated instructional materials.</li></ul>	Spring 2023 Fall 2022
	<b>Research Assistant, University of Virginia</b> <i>Leading Engineering for Safe Software (LESS) Laboratory</i> <ul style="list-style-type: none"><li>Created a novel method for inferring spatial properties from robot data.</li><li>Built a pipeline to approximate scene coverage for AV perception systems.</li></ul>	Summer 2021 - Winter 2022
	<b>Research Assistant, University of Minnesota</b> <i>Interactive Robotics and Vision (IRV) Laboratory</i> <ul style="list-style-type: none"><li>Developed a streamlined method for paired diver image generation to combat data scarcity.</li><li>Investigated a method for synthetic image generation to aid with data augmentation.</li></ul>	Winter 2019 - Fall 2020
	<b>Teaching Assistant, University of Minnesota</b> <i>CSCI 2011 : Discrete Structures of Computer Science</i> <i>CSCI 1133 : Intro. to Computing and Programming Concepts</i> <ul style="list-style-type: none"><li>Conducted laboratory sections to encourage student collaboration and participation.</li><li>Hosted office hours and discussion sections; assisted with grading and proctoring.</li></ul>	Fall 2019 Fall 2018, Spring 2019
	<b>REU Research Assistant, University of Nebraska</b> <i>Nebraska Intelligent MoBile Unmanned Systems (NIMBUS) Laboratory</i> <ul style="list-style-type: none"><li>Analyzed effects of hyperparameter tuning and data augmentation on UAV detection.</li></ul>	Summer 2019
	<b>Network Packet Analysis with NLP</b> <ul style="list-style-type: none"><li>Created a novel command line tool to parse and query network data with NLP.</li><li>Utilized the GPT-3 API to generate SQL queries over MySQL data tables.</li></ul>	Spring 2023
PROJECTS	<b>VAE-Guided Testing Framework for OpenPilot</b> <ul style="list-style-type: none"><li>Designed and trained a VAE for manifold approximation of traffic images.</li><li>Clustered training set images with K-Means and PCA to exploit underrepresented features.</li></ul>	Spring 2022
	Python/C++/C/Java/SQL – Machine Learning – Computer Vision – Robotics – Docker – Git	
SERVICE, HONORS, AND AWARDS	<ul style="list-style-type: none"><li>Paper Reviewer, IEEE International Conference on Robotics and Automation</li><li>UROP Research Award Recipient</li><li>2nd Place; University of Nebraska REU Research Competition</li></ul>	Fall 2022 Summer 2020 Summer 2019
PUBLICATIONS	<b>C. Morse</b> , L. Feng, M. Dwyer, S. Elbaum, “A Framework for the Unsupervised Inference of Relations Between Sensed Object Spatial Distributions and Robot Behaviors.” <i>2023 IEEE International Conference on Robotics and Automation (ICRA)</i> .	
	M. J. Islam, C. Edge, Y. Xiao, P. Luo, M. Mehtaz, <b>C. Morse</b> , S. S. Enan, and J. Sattar, “Semantic Segmentation of Underwater Imagery: Dataset and Benchmark.” <i>2020 IEEE International Conference on Intelligent Robots and Systems (IROS)</i> .	