Stephen Josef Wissow

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Education	UNIVERSITY OF NEW HAMPSHIRE Ph.D. in Computer Science, 2020-present Research interests: heuristic search, planning under time pressure, autonomous systems. Advisor: Prof. Wheeler Ruml. Relevant coursework: Planning for Robots (Prof. Wheeler Ruml) Machine Learning (Prof. Marek Petrik) Algorithms (Prof. Laura Dietz) Mathematical Optimization (Prof. Marek Petrik)
	UNIVERSITY OF NEW HAMPSHIRE M.S. in Computer Science, 2020 Thesis: <i>Time Enough: Synchronization for Latency Measurement</i> . Advisor: Prof. Radim Bartoš.
	REED COLLEGEB.A. in English, 2008Thesis: Ethics, Anti-elegy, and Specular Aversio: Language and Image in Li-Young Lee.Advisor: Prof. Ellen Stauder.Relevant coursework:Algorithms and Data Structures (Prof. Jim Fix)
Honors	Outstanding Paper Award, European Conference on Artificial Intelligence2024Communication Award of Excellence, ACM SIGUCCS2011Commendation for Academic Excellence, Reed College2003–2004 and 2006–2007
Conference Publications	Stephen Wissow and Masataro Asai, "Scale-Adaptive Balancing of Exploration and Exploitation in Classical Planning," <i>Twenty-Seventh European Conference on Artificial Intelligence (ECAI-24)</i> , 2024.
	Stephen Wissow, Fanhao Yu, and Wheeler Ruml, "Tunable Suboptimal Heuristic Search," Proceedings of the Seventeenth International Symposium on Combinatorial Search (SoCS-24), 2024.
Workshop Publications	Caleb Hill, Stephen Wissow, and Wheeler Ruml, "Comparing Planners: Beyond Coverage Ta- bles," Proceedings of the ICAPS-24 Workshop on the International Planning Competition (WIPC- 24), 2024.
	Stephen Wissow and Masataro Asai, "Scale-Adaptive Balancing of Exploration and Exploitation in Classical Planning," Proceedings of the ICAPS-23 Workshop on Heuristics and Search for Domain-Independent Planning (HSDIP-23), 2023.
Abstracts	Masataro Asai and Stephen Wissow, "Extreme Value Monte Carlo Tree Search (Extended Abstract)," <i>Proceedings of the Seventeenth International Symposium on Combinatorial Search (SoCS-24)</i> , 2024.
	Stephen Wissow, "Searching with Distributional Heuristics (Student Abstract)," Proceedings of the Sixteenth International Symposium on Combinatorial Search (SoCS-23), 2023.

Research Experience	UNH AI GROUP, Durham, NH Graduate Research Assistant May 2023–August 2024 Investigated various problem settings related to planning under time pressure, including contract search (minimize solution cost subject to absolute bound on planning time) and tunable suboptimal search (best cost-time trade-off). (Prof. Wheeler Ruml)
	MIT-IBM WATSON AI LAB, Cambridge, MA Graduate Research Intern May-August 2022 Developed distributional heuristic, demonstrated its effect on classical planning domains. Implemented MCTS/THTS framework in Pyperplan, developed tools to run experiments
	on IBM's Cognitive Compute Cluster.
	UNH CENTER FOR COASTAL AND OCEAN MAPPING, Durham, NH Graduate Research Assistant September 2020–January 2022 Compared real-time and offline anytime motion planning for autonomous surface vessels, with deployment to Lake Huron for remote, over-the-horizon autonomous operations.
Projects	TUNABLE SUBOPTIMAL HEURISTIC SEARCH October 2023-present Proposed new suboptimal heuristic search algorithm that is robust to state spaces with dead-ends and returns lower cost solutions at a given CPU time than previous algorithms, including standard benchmark and state-of-the-art bounded suboptimal algorithms.
	Developed multi-domain heuristic search code base in Rust.
	DISTRIBUTIONAL HEURISTICS Summer 2022–present Graduate research internship project at <i>MIT-IBM Watson AI Lab</i> : developed and imple- mented distributional heuristic using principled approach based on randomized tie-breaking in popular classical planning heuristics. (Dr. Masataro Asai)
	PLANNING WITH A KNOWN DEADLINE Fall 2021–Fall 2023 Class project for <i>Planning for Robots</i> : Comparing different heuristics and error models for use in a deadline-aware version of beam search. (Prof. Wheeler Ruml)
	MOTION PLANNING WITH DYNAMIC OBSTACLES Fall 2020–Fall 2021 Research project implementing offline anytime BIT* in Rust and integrating into a field- tested ROS-based autonomy stack for a surface vessel. (Prof. Wheeler Ruml)
	DATA-DRIVEN DYNAMICS MODEL FOR A BOAT Spring 2021 Class project for <i>Machine Learning</i> : Used <i>k</i> -nearest neighbors to learn a data-driven model from physics-based simulated data as proof-of-concept for use in model-predictive control. (Prof. Marek Petrik)
Teaching Experience	UNH DEPARTMENT OF COMPUTER SCIENCE, Durham, NHGraduate Teaching Assistant: Algorithms (CS 758/858)Fall 2022, Fall 2024Presented weekly recitation with worked examples of lecture material.
	Helped students improve understanding during weekly office hours.
	Instructor of Record: Theory of Computation (CS 659) Spring 2022, Spring 2023 Taught junior-level theory course on formal proofs, set theory, formal languages and gram- mars, finite automata, diagonalization, pumping, and computability to class of 40 students.
	Supervised a undergraduate and graduate student graders.

	Graduate Teaching Assistant: Assembly Programming (CS 520) Fall 201 Presented best practices and answered debugging questions in lab sessions. Guided student in problem formulation and problem solving during office hours.	9 ;s
	Instructor of Record: Android Programming (CS 580) Spring 201 Presented lectures, developed group activities, graded programming assignments and problem sets, and solicited mid-course feedback from students.	9)-
	Grader: Object-Oriented Design and Development (CS 619) Spring 201	9
	Graduate Lab Assistant: Algorithms and Data Structures (CS 515)Fall 201Encouraged students' mastery of GDB, Valgrind, and debugging.Fall 201	8
Professional Experience	DRÄGER, Andover, MA Software Engineering Intern Developed Python wrapper for C library to drive EKG simulator for use in automate testing of patient monitor products.	9 d
Service	UNH M.S. THESIS COMMITTEES Lizhi Xu, GNSS-based Accurate One-way Latency Characterization of Transcontinental an Transoceanic Internet Paths 202	d
	UNH STUDENT ORGANIZATIONS Graduate Student Parent & Caregiver Support Group 2019–202 Co-founded group and organized events to help graduate students balance family care giving and academic responsibilities.	0 >-
	REED COLLEGE COMMITTEES Campus Climate Committee 2011–201 Served as staff and alumni representative to craft campus-wide climate survey, collaboratin with students, faculty, administrators, and an outside consultant to design a comprehensive assessment to further the college's inclusivity goals.	4 g re
	Computing Policy Committee 2006–200 As student representative, critiqued and revised draft campus-wide computing policies for submission to the college administration.	8 or
	Technology Advisory Committee 200 As student representative, helped plan implementation of campus-wide LDAP director system.	5 y
Skills	Programming languages: Rust, Python, C++ (previously Java, Scala, R, x86-64 assembly) Dev tools: Slurm, Git, (Neo)Vim, Tmux, Bash.	
Citizenship	U.S.A.	