

Biographical Sketch: Dana S. Nau

Professional Preparation

- Duke University: Ph.D., Computer Science, 1979 (NSF graduate fellow)
- Duke University: A.M., Computer Science, 1976 (NSF graduate fellow)
- University of Missouri–Rolla (now called Missouri S&T): B.S., Applied Mathematics, 1974

Appointments

- Co-director 2005–present: Lab. for Computational Cultural Dynamics (LCCD), Univ. of Maryland
- Professor 1994–present, Associate Professor 1984–1994, Assistant Professor 1979–1984:
Dept. of Computer Science, University of Maryland
- Professor 1994–present, Associate Professor 1988–1994:
Institute for Systems Research ISR, University of Maryland
- Affiliate Professor 1994–present, Affiliate Associate Professor 1986–1994:
Institute for Advanced Computer Studies (UMIACS), University of Maryland
- Affiliate Professor 1994–present: Dept. of Mechanical Engineering, University of Maryland

Publications: Dr. Nau has more than 300 refereed publications. For a list (with links to many of them), see <http://www.cs.umd.edu/users/nau/publications.html>

- *Five Publications Related to the Proposed Project:*

1. R. Alford, U. Kuter, and D. S. Nau. Translating HTNs to PDDL: A small amount of domain knowledge can go a long way. *Internat. Joint. Conf. Artificial Intelligence (IJCAI)*, July 2009.
2. U. Kuter, D. S. Nau, M. Pistore, and P. Traverso. Task decomposition on abstract states, for planning under nondeterminism. *Artificial Intelligence* **173**:669–695, 2009.
3. A. Gerevini, U. Kuter, D. Nau, A. Saetti, and N. Waisbrot. Combining domain-independent planning and HTN planning: The Duet planner. *Proc. European Conf. Artificial Intelligence (ECAI)*, pp. 573–577, July 2008.
4. D. S. Nau, T.-C. Au, O. Ilghami, U. Kuter, H. Muñoz-Avila, J. W. Murdock, D. Wu, and F. Yaman. Applications of SHOP and SHOP2. *IEEE Intelligent Systems* **20**(2):34–41, Mar.-Apr. 2005.
5. M. Ghallab, D. S. Nau, and P. Traverso. *Automated Planning: Theory and Practice*. Morgan Kaufmann, May 2004.

- *Five Other Publications:*

6. P. Roos, J. R. Carr, and D. Nau. Evolution of state-dependent risk preferences. *ACM Trans. Intelligent Systems and Technology (TIST)* 1(1):6:16:21, Oct. 2010.
7. D. Nau, M. Luštrek, A. Parker, I. Bratko, and M. Gams. When is it better not to look ahead? *Artificial Intelligence*, 2010.
8. P. Roos and D. S. Nau. Risk preference and sequential choice in evolutionary games. *Advances in Complex Systems*, Aug. 2010.
9. U. Kuter, D. Nau, E. Reisner, and R. Goldman. Using classical planners to solve nondeterministic planning problems. *Internat. Conf. Automated Planning and Scheduling (ICAPS)*, pp. 190–197, 2008.
10. T.-C. Au and D. S. Nau. Accident or intention: That is the question (in the iterated prisoner’s dilemma). *Internat. Conf. Autonomous Agents and Multiagent Systems (AAMAS)*, pp. 561–568, 2006.

Synergistic Activities

1. **Examples of research impact.** Dr. Nau's discovery of game-tree pathology led to subsequent research by dozens of other researchers over the past 32 years. His research on manufacturing planning has been used at NIST, Texas Instruments, General Motors, Northrop Grumman, and elsewhere. He co-authored the algorithms that enabled *Bridge Baron* to win the 1997 world championship of computer bridge (which was reported in major media outlets such as the *Washington Post* and *New York Times*, and was highlighted on NSF's web site). He led the research teams that developed the SHOP and SHOP2 automated-planning programs, which have been downloaded more than 13,000 times and have been used in many hundreds of projects in industry, government, and academia.
2. **Educational impact.** *Automated Planning: Theory and Practice*, co-authored by Dr. Nau, is the *de facto* standard textbook on its topic. Dr. Nau also authored an extensive set of lecture slides for use with the book, and released them on the web under a Creative Commons license.
3. **Awards and honors.** NSF Graduate Fellow, 1974-7. J.B. Duke Graduate Fellow, 1977-8. NSF Presidential Young Investigator, 1984-9. IBM faculty development award, 1984-6. Honorable mention, Texas Instruments call for papers on AI for industrial automation, 1987. Honorable mention for best paper, AAAI-91. ISR Outstanding Systems Engineering Faculty, 1993. Best paper, ASME CIE Conference, 1994. Best research paper, ECCBR, 2002. Elected AAAI Fellow, 1996. Co-author of *Bridge Baron* (1997 world champion of computer bridge). Lead author of SHOP2 (award winner in the 2002 International Planning Competition). ICAPS influential paper honorable mention, 2009.
4. **Service to the scientific and engineering community.** Dr. Nau is or has been on the editorial boards of *JAIR*, *JCISE*, *Applied Artificial Intelligence*, *ORSA Journal on Computing*, and *ACM Trans. Intelligent Systems*, and has reviewed for many other journals. He co-chaired ICAPS-2003, SBP-2001 and other major conferences, and has been a program committee member or senior program committee member for IJCAI, AAAI, and a great many others. He has been a reviewer for many different funding agencies.

Collaborators (last 4 years): Ron Alford, U. of MD; Tsz-Chiu Au, U. of Texas; Ivan Bratko, U. of Ljubljana; Sun-Ki Chai, U. of Hawaii; J. Ryan Carr, U. of MD; Kan-Leung Cheng, U. of MD; Michael Fu, U. of MD; Matjaž Gams, J. Stefan Institute; Michele Gelfand, U. of MD; Alfonso Gerevini, U. of Brescia; Malik Ghallab, LAAS-CNRS; Robert Goldman, Smart Info. Flow Tech.; Samir Khuller, U. of MD; Sarit Kraus, Bar-Ilan U.; Ugur Kuter, Smart Info. Flow Tech.; Stephen Lee-Urban, Lehigh U.; Huan Liu, ASU; Mitja Luštrek, J. Stefan Institute; Steve Marcus, U. of MD; Héctor Muñoz-Avila, Lehigh U.; Shimon Nof, Purdue U.; Austin Parker, U. of MD; Marco Pistore, Fondazione Bruno Kessler; Eric Raboin, U. of MD; Elnatan Reisner, U. of MD; Patrick Roos, U. of MD; Alessandro Saetti, U. of Brescia; Emre Sefer, U. of MD; John Salerno, AFRL; Vikas Shivashankar, U. of MD; V.S. Subrahmanian, U. of MD; Florent Teichteil-Königsbuch, ONERA; Paolo Traverso, Fondazione Bruno Kessler; Nathaniel Waisbrot, Highfleet; Jonathan Wilkenfeld, U. of MD; Brandon Wilson, U. of MD; Jay Yang, RIT; Inon Zuckerman, Ariel Univ. Center.

Graduate advisors and and postdoctoral sponsors: Max Woodbury (professor emeritus, Duke University); Alan Biermann (professor emeritus, Duke University).

Graduate and postgraduate advisees: Tsz-Chiu Au, Yue (Jason) Cao, J. Ryan Carr, Kan-Leung Cheng, Ping-Chung Chi, Mihai Ciocoiu, Kutluhan Erol, David Freides, Subrata Ghosh, Michael Gray, Satyandra Gupta, Naresh Gupta, Kiran Hebbar, Nicholas Ide, Okhtay Ilghami, Deborah Jones, Raghu Karintheni, Ken Knudsen, Paul Konigsburg, Ugur Kuter, Amnon Lotem, Héctor Muñoz-Avila, J. William Murdock, Austin Parker, Eric Raboin, William Regli, Patrick Roos, Vikas Shivashankar, Stephen J. J. Smith, Allen Teague, Scott Thomas, Reiko Tsuneto, George Vanecek, Brandon Wilson, Nathaniel Waisbrot, Dan Wu, Fusun Yaman, Qiang Yang, Zhiyang Yao, Lingling Zhang, Inon Zuckerman.