Vikas Shivashankar

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Education

◇ **University of Maryland**, College Park, Maryland, USA. Aug 2009-present
Ph.D., Department of Computer Science

- Advisor : Prof. Dana S. Nau
- Research Area : Automated Planning & Robotics
- GPA : 3.8/4

◇ **Indian Institute of Technology Madras**, Chennai, India. May 2009
B.Tech., Computer Science & Engineering

- Thesis : Path Planning of Multiple Spatially Extended Objects
- Minor : Operations Research
- GPA : 8.88/10

Research Interests

Hierarchical Planning, Robotics, Reinforcement Learning

Publications

Ron Alford, **Vikas Shivashankar**, Ugur Kuter, and Dana S. Nau. *On the Feasibility of Graphplan-style Heuristics in HTN Planning.* In Submission.

Vikas Shivashankar, Ron Alford, Ugur Kuter, and Dana S. Nau. *The GoDeL Planning System: A More Perfect Union of Domain-independent and Hierarchical Planning.* In the 23rd International Joint Conference on Artificial Intelligence (*IJCAI 2013*), Beijing, China, 2013. *To Appear.*

Ron Alford, **Vikas Shivashankar**, Ugur Kuter, and Dana S. Nau. *HTN Problem Spaces: Structure, Algorithms, Termination.* In the Fifth Annual Symposium on Combinatorial Search (*SoCS 2012*), Niagara Falls, Canada, 2012.

Vikas Shivashankar, Ugur Kuter, Dana S. Nau, and Ron Alford. *A Hierarchical Goal-Based Formalism and Algorithm for Single-Agent Planning.* In the 11th International Conference on Autonomous Agents and Multiagent Systems (*AAMAS 2012*), Valencia, Spain, 2012.

Vikas Shivashankar, Rajiv Jain, Ugur Kuter, and Dana S. Nau. *Real-Time Planning for Covering an Initially-Unknown Spatial Environment.* In the 24th International FLAIRS Conference (*FLAIRS 2011*), Palm Beach, Florida, 2011.

Peter Struss, **Vikas Shivashankar**, and Mohamed Zahoor. *A Fault-model-based Debugging Aid for Data Warehouse Applications.* In: Coelho, H., Studer, R., Wooldridge, M. (eds.), 19th European Conference on Artificial Intelligence (*ECAI 2010*), IOS Press 2010, pp. 419-424.

Peter Struss, **Vikas Shivashankar**, and Mohamed Zahoor. *Debugging Support for Data Warehouse Applications.* Proceedings of the Annual International Academic Conference on Business Intelligence and Data Warehousing (*BIDW 2010*), Singapore, 2010. p. 65-71.

Peter Struss, **Vikas Shivashankar**, and Mohamed Zahoor. *Modeling for Fault Localization in Data Warehouse Applications.* In: Zabkar, J. and Bratko, I. (eds.), 23rd International Workshop on Qualitative Reasoning (*QR09*), Ljubljana, Slovenia, 2009, pp. 111-118.

Vikas Shivashankar. *Path Planning of Multiple Spatially Extended Objects.* B.Tech thesis, Indian Institute of Technology, Madras, 2009.

PRESENTATIONS

- *A Hierarchical Goal-Based Formalism and Algorithm for Single-Agent Planning.* In the 11th International Conference on Autonomous Agents and Multi-Agent Systems (*AAMAS 2012*)
- *Real-Time Planning for Covering an Initially-Unknown Spatial Environment.* In the 24th International FLAIRS Conference (*FLAIRS 2011*)

GRADUATE COURSEWORK

- **Artificial Intelligence** : Machine Learning, AI Planning
- **Computational Biology** : Computational Evolutionary Dynamics
- **Programming Languages** : Program Analysis and Understanding
- **Scientific Computing** : Numerical Analysis I
- **Theory** : Complexity Theory, Randomized Algorithms, Introduction to Cryptography, Computational Geometry, Algorithms for Combinatorial Optimization

INTERNSHIPS

- **Technical University of Munich, Munich, Germany** MAY-AUG 2008
  - · Advisor : Prof. Peter Struss, Model-based Reasoning Group
  - · Topic : Model-based Software Debugging

  The objective of the project was to explore the idea of employing Model-based Reasoning to achieve intelligent software debugging. This is to be implemented in Ericsson's telecom billing systems to help them with focused fault localization in their software. We were successful in building a preliminary fault localization tool for Ericsson that showed promising results when tested on their systems
- **Strand Life Sciences, Bangalore, India** MAY-JUL 2007
  - · Advisor : Dr. Vamsi Veeramachaneni
  - · Topic : Automatic Reconstruction of Signaling Pathways

  I was involved in the development, implementation and validation of algorithms for automatic reconstruction of signaling pathways in their proprietary network analysis tool **PathwayArchitect™**

SKILLS

- **Languages** : C, C++, Common Lisp, Java, Matlab, Python
- **Tools** : SQL, LaTeX
- Comfortable with UNIX-based and Windows operating systems

AWARDS

- Gannon Summer Research Award from the CS department of the University of Maryland
- 2 year Block Fellowship from the University of Maryland (*2009-2011*)
- Secured an All-India Rank of 141 in the IIT Joint Entrance Exam(JEE-2005) among 1,70,000 students all over India
- Secured an All-India Rank of 167 and 6th in Karnataka State in the AIEEE-2005 exam among 4,20,000 students all over India
- Secured the 49^{th} rank in the Karnataka CET Exam
- Was one of the 50 selected from Karnataka State for the INPhO(Indian National Physics Olympiad) and INChO(Indian National Chemistry Olympiad)

REFERENCES

Available on request.