Juan Irving Solis Vidana

Champaign, IL	61820	217-848-0921	irvingsolis89@tamu.edu	
1 EDUCAT	ION			
Doctor of Philosophy , Texas A&M University - College Station, TX Computer Science - Multi-Robot Motion Planning Advisor: Dr. Nancy Amato			expected December 2024	
Bachelor of Science , Instituto Tecnologico Superior de Fresnillo - Mexico Major: Electrical Engineering			February 2012	
2 HONORS				
 Conacyt Schoolarship for International Graduate Studies - Mexico Outstanding Achievement on ELIL200 class at TAMU - College Station, TX Canieti Schoolarship for Summer Internship at TAMU - Mexico Best Average of the Class - Mexico 1st Regional Place in Electrical Engineering contest - Mexico 1st National Place in Mexico Mathematics Olympiad - Mexico 3 TECHNICAL SKILLS 			December 2015 August 2014 May 2014 February 2012 May 2007 May 2003	
Programming La	nguages:			
• C++	• Python	• R	• HTML/CSS	
Engineering Soft	ware:			
• Robotics Operating System		• MATLAB		
4 RESEARC	CH INTEREST	T S		
• Multi-Robot Motion Planning		• Path and Motion F	• Path and Motion Planning	
• Multi-Robot Systems		• Mobile Navigation	• Mobile Navigation	

5 PUBLICATIONS

 I. Solis, J. Motes, R. Sandstrom and N. M. Amato, "Representation-Optimal Multi-Robot Motion Planning Using Conflict-Based Search," in IEEE Robotics and Automation Letters, vol. 6, no. 3, pp. 4608-4615, July 2021, doi: 10.1109/LRA.2021.3068910. • Solis, I., Motes, J., Qin, M., Morales, M., and Amato, N. M. (2023). Adaptive Robot Coordination: A Subproblem-based Approach for Hybrid Multi-Robot Motion Planning. ArXiv. /abs/2312.08554

6 EXPERIENCE

Research Assistant

Parasol Lab, University of Illinois at Urbana-Champaign Parasol Lab, Texas A&M University July 2019 - Present January 2016 - July 2019

- Explored motion planning techniques with a focus on applications to robotics, specifically in the domain of multi-robot systems. Investigated hybrid multi-robot motion planning strategies to enhance scalability and reduce planning time while maintaining efficient cost solutions."
- Contributed to the project titled "Human-Robot Collaboration: Interactive Manipulation for Industrial Robotics" from 2021-2023. Played a key role in the team responsible for multi-robot task allocation, scheduling, and coordination, specifically focusing on mobile robot navigation."
- Contributed to the Open Source Project dedicated to releasing publicly the Parasol Planning Library (PPL), a C++ task and motion planning library that allows the development of new algorithms and a testbed for experimental validation and visualization.

Grader

Department of Computer Science, Texas A&M University College Station, TX

• Grading for CSCE121: Introduction to Program Design and Concepts and CSCE221: Data Structures and Algorithms courses.

Math Professor

Department of Electrical and Industrial Engineering Instituto Tecnologico Superior de Fresnillo, Zacatecas, MX

• Taught math courses related to Calculus and Statistics.

7 PROFESSIONAL ACTIVITIES

- Member of *IEEE Robotics and Automation Society* (IEEE/RAS), Association for Computing Machinery (ACM), and Society for Industrial and Applied Mathematics (SIAM).
- In 2023, I attended the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), CRA-WP Grad Cohort Workshop, and CMD-IT/ACM Tapia Computing Conference.
- In 2022, I attended the CMD-IT/ACM Tapia Computing Conference.
- Reviewed motion planning papers in 2017-2023 submitted to: *IEEE/RSJ International Confer*ence on Intelligent Robots and Systems (IROS), *IEEE International Conference on Robotics and* Automation (ICRA), Robotics: Science and Systems Conference, (RSS), *IEEE Robotics and Au*tomation Letters (RA-L) and Workshop on the Algorithmic Foundations of Robotics (WAFR).

September 2018 - May 2019

January 2013 - December 2015

- Co-mentored summer high school and DREU students (2017-2023) in activities such as promoting their programming skills, guided them in the Parasol Motion Planning Crash Course, as well as helping them in their summer research projects.
- Redesigned the website of the Parasol Lab Research Group at University of Illinois. Designed the website for the conference ISRR 2017, where Dr. Nancy Amato served as the main chair of the event.