

307 W White St  
Champaign, IL, 61820  
(214) 534-2258

**James Motes**  
jnotes2@illinois.edu

4014 Rosebud Dr  
Rowlett, TX 75089  
(972) 412-0096

## Education

**University of Illinois Urbana-Champaign**, Champaign, Illinois  
Computer Science, Ph.D.  
Advisor: Dr. Nancy M. Amato

Current  
GPA: 4.00

**Texas A&M University**, College Station, Texas  
Computer Science, M.S.  
Advisor: Dr. Nancy M. Amato  
Thesis: Interaction Template for Multi-Robot Systems

Graduation August 2019  
GPA: 4.00

**Texas A&M University**, College Station, Texas  
Computer Engineering, Bachelor of Science  
Mathematics, Minor  
Engineering Honors  
Undergraduate Research Scholar

Graduation May 2018  
GPA: 3.86

## Honors

Engineering Graduate Merit Fellowship  
Presidential Endowed Scholarship  
Distinguished Student Award - Dwight Look College of Engineering  
Industrial Affiliates Program Scholarship  
Dell Merit Scholarship  
Salutatorian - Rowlett High School (2/591)

August 2018 - August 2019  
August 2014 - May 2018  
May 2017  
August 2014 - May 2018  
August 2017 - May 2018  
June 2014

## Publications

- Chen, T., Huang, Z., **Motes, J.**, Geng, J., Ta, Q., Dinkel, H., Abdul-Rashid, H., Myers, J., Mun, Y., Lin, W., Huang, Y., Liu, S., Morales, M., Amato, N. M., Driggs-Campbell, K., Bretl, T., 2022. Insights from an Industrial Collaborative Assembly Project: Lessons in Research and Collaboration. *IEEE ICRA Workshop on Collaborative Robots and the Work of the Future*, Philadelphia, USA, 2022.
- Lee, H., **Motes, J.**, Morales, M., and Amato, N. M., 2021. Parallel Hierarchical Composition Conflict-Based Search for Optimal Multi-Agent Pathfinding. *IEEE Robotics and Automation Letters*, 6(4), pp. 7001-7008. Presented at the International Conference on Intelligent Robots and Systems (IROS), Prague, Czech Republic, 2021 (virtual).
- Solis, I., **Motes, J.**, Sandström, R., and Amato, N. M., 2021. Roadmap-Optimal Multi-Robot Motion Planning using Conflict-Based Search. *IEEE Robotics and Automation Letters*, 6(3), pp. 4608-4615. Presented at the International Conference on Robotics and Automation (ICRA), Xi'an, China, 2021 (virtual).
- **Motes, J.**, Sandström, R., Lee, H., Thomas, S., and Amato, N. M., April 2020. "Multi-Robot Task and Motion Planning With Subtask Dependencies," in *IEEE Robotics and Automation Letters*, 5(2), pp. 3338-3345. Presented at the International Conference on Robotics and Automation, Paris (ICRA), France, 2020 (virtual).
- **Motes, J.**, Sandström, R., Adams, W., Ogunyale, T., Thomas, S. and Amato, N.M., 2019. Interaction Templates for Multi-Robot Systems. *IEEE Robotics and Automation Letters*, 4(3), pp. 2926-2933. Presented at the International Conference on Intelligent Robots and Systems (IROS), Macao, China, 2019.

## Experience

## Graduate Research

May 2018 - Present

- Collaborating with Foxconn Interconnect Technologies and two other research labs at UIUC (Tim Bretl, Katie Driggs-Campbell) on a series of projects for a collaborative human-robot factory
- Developed multi-agent interaction template method enabling multi-agent task planning through a single motion planning query rather than a traditional task and motion planning system
- Designed framework for optimal multi-robot planning for large task sets
- Developed complex precedence and synchronization task constraint handling for multi-robot systems
- Mentored graduate students (10) within my research group
- Mentored undergraduate students (10) both local university students and DREU program students

## AI4All

August 2021 - Present

- Instructor for Discover AI introductory artificial intelligence courses at the University of Texas at El Paso and New Mexico State University (Spring 2022)
- TA for Discovery AI introductory artificial intelligence course at the University of Illinois Urbana-Champaign (Fall 2021)

## Undergraduate Research Scholar

September 2017 - May 2018

- Developed proactive multi-agent persistent task performance system under battery constraint
- Culminated in undergraduate thesis

## Hewlett Packard Enterprise - Design Verification Engineer

May - August 2017

- Worked on Gen-Z project within the Silicon Design Lab
- VLSI Design Verification utilizing Universal Verification Methodology (UVM)
- 2nd Place Intern Project Poster Fair Contest

## Leadership and Professional Activities

### Institute of Electrical and Electronics Engineers, Student Chapter

September 2016 - May 2018

- Learned about companies, skills workshops

### Fish Camp Counselor

March 2016 - October 2017

- Introduced freshmen to Texas A&M and served as a guide for their transition into college

### Memorial Student Center Freshman Leadership International

#### Assistant Director

May 2015 - May 2016

- Guided freshmen in their promotion of global culture and awareness while fostering their growth in leadership abilities
- Global Citizenship Campaign: reached over 5,000 people through multimedia campaign on campus emphasizing the importance of global citizenship through education of international issues
- LifeCycles (Fall 2014, Spring 2015, Fall 2015): Donation drive for household goods for Burmese refugees in Houston
- RefYOUgee: Organized realistic refugee simulation for all of campus and provided service opportunities

#### General Committee Member

September 2014 - May 2015

- Worked with other freshmen to promote global culture and awareness
- Tales of Tibet: brought in Tibetan monks to campus that taught classes
- Soles for Souls: shoe drive for children in Africa

## Technical Skills

C/C++

Python

Java

JavaScript

C#

Swift

React/React Native

Dart