

Sterling McLeod

Curriculum Vitae

Charlotte, NC

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Education

- 08/2013–05/2019 **Ph.D. Computer Science**, *University of North Carolina at Charlotte*, Charlotte, NC, USA,
Advisor: Jing Xiao.
Dissertation: Robust and Reliable Real-time Adaptive Robot Motion Planning
- 06/2014 **M.S. Computer Science**, *University of North Carolina at Charlotte*, Charlotte, NC, USA.
- 06/2012 **B.S. Computer Science**, *University of North Carolina at Charlotte*, Charlotte, NC, USA.

Publications

- 03/2020 Kai Zhang, **Sterling McLeod**, Minwoo Lee, and Jing Xiao *Continuous reinforcement learning to adapt multi-objective optimization online for robot motion*. International Journal of Advanced Robotic Systems, 17(2), 2020.
- 2019 **Sterling McLeod**. (2019). *Robust and reliable real-time adaptive motion planning*. ProQuest LLC.
- 05/2019 **Sterling McLeod** and Jing Xiao. *Navigating Dynamically Unknown Environments Leveraging Past Experience*, in IEEE International Conference on Robotics and Automation (ICRA) 2019.
- 11/2017 Mahmoud Abdelgawad, **Sterling McLeod**, Anneliese Andrews, and Jing Xiao. *Model-based testing of a real-time adaptive motion planning system*. Advanced Robotics, 31(22):1159–1176, 2017.
- 12/2016 Mahmoud Abdelgawad, **Sterling McLeod**, Anneliese Andrews, and Jing Xiao. *Model-based Testing of Real-time Adaptive Motion Planning (RAMP)*, in IEEE International Conference on Simulation, Modeling, and Programming for Autonomous Robots (SIMPAN) 2016.
- 10/2016 **Sterling McLeod** and Jing Xiao. *Real-time Adaptive Non-holonomic Motion Planning in Unforeseen Dynamic Environments*, in IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2016.

Experience

Research and Academic

- 08/2018–Present **Lecturer**, *University of North Carolina at Charlotte*, Charlotte, NC.
- Designed and taught courses on artificial intelligence, robotics, operating systems, and introduction to computer science. The course titles are below.
 - Mobile Robotics
 - Intelligent Robotics
 - Introduction to Artificial Intelligence
 - Introduction to Computer Science II
 - Mentored undergraduate and masters students on projects involving robot motion, self-driving cars, mapping, and 3D reconstruction
 - Organized seminars that connect faculty with undergraduate students interested in research
 - Served on and chaired Undergraduate Curriculum Committee for several years

- 08/2013– **PhD Student**, *University of North Carolina at Charlotte*, Charlotte, NC.
- 05/2019
- Performed literature reviews on real-time robot motion planning, task constrained motion planning, real-time perception of moving obstacles, and software testing in robotics
 - Designed and implemented algorithms to perform non-holonomic real-time motion planning in the presence of unknown obstacles with unforeseen motion
 - Published work in high-quality conferences and journals
 - Collaborated with industry partners to implement cutting-edge algorithms on real systems
- 08/2014– **GAANN Research Fellow**, *University of North Carolina at Charlotte*, Charlotte, NC.
- 12/2016
- Received Graduate Assistance in Areas of National Need (GAANN) Fellowship to receive training in pedagogy while completing PhD
 - Receive training through seminars, workshops, and class observations in higher education
 - Responsible for designing and teaching a new undergraduate course in my research area
- **Instructor of Record**, *University of North Carolina at Charlotte*, Charlotte, NC.
 - Intelligent Robotics (ITCS 4151), Spring 2017
 - Topics in Computer Science: Robot Navigation (ITCS 3050), Spring 2016
 - Operating Systems and Networking (ITCS 3146), Fall 2013
 - **Teaching Assistant**, *University of North Carolina at Charlotte*, Charlotte, NC.
 - Intelligent Systems (ITCS 6150/8150), Fall 2016, Fall 2015, Fall 2014
 - Intelligent Robotics (ITCS 6151/8151), Spring 2015
 - Design and Analysis of Algorithms (ITCS 2215), Spring 2014

Industry

- 11/2012– **Robotics Engineer**, *Coroware Inc.*, Charlotte, NC.
- 07/2013
- Worked in small team to handle various tasks of robotics branch
 - Built robots to order for clients
 - Developed Android and Linux apps for a 4-wheel differential drive mobile robot
- 06/2012– **Software Engineering Intern**, *Chemring Detection Systems*, Charlotte, NC.
- 11/2012
- Developed software with a small team for Joint Biological Tactical Detection System (JBTDTS)
 - Implemented features and unit tests for C# modules on:
 - Remote file transfer
 - GPS
 - Biological data sensor streaming
 - Updated approximately 80 UML Class and Sequence diagrams for a 60k SLOC system

Skills

Languages *Competent* with C/C++, Python, C#, Java, \LaTeX , Matlab; *Familiar* with Javascript, Bash

Tools *Competent* with Linux, MSVS, ROS, Unity, Gazebo, OpenGL, Git; *Familiar* with Unreal, OpenSceneGraph, MoveIt!

Awards

- 04/2017 2nd Place, Computer Science, Mathematics, and Engineering, UNC-Charlotte 16th Graduate Research Symposium
- 10/2016 NSF Travel Grant to attend IROS 2016
- 08/14–12/16 Graduate Assistance in Areas of National Need (GAANN) Fellowship

Service

- 2020-2022 **Chair**, *Computer Science Undergraduate Curriculum Committee*.
- 2018-2019 **Member**, *Computer Science Undergraduate Curriculum Committee*.
- 2015–2016 **CCI Grads President**, *UNC-Charlotte*.
- 2016 **Vice Chair for Judging and Awards**, *UNC-Charlotte Graduate Research Symposium*.
- 2015 **General Volunteer**, *UNC-Charlotte Graduate Research Symposium*.
- 2015 **Transcript Editor**, *History of Robotics Project*, <http://roboticshistory.indiana.edu/>.