

Yuri G. Rocha

✉ yurirocha15@gmail.com
🌐 www.yurirocha.com
in [linkedin.com/in/yurirocha15](https://www.linkedin.com/in/yurirocha15)
🐙 github.com/yurirocha15
s [yurirocha15](https://scout24.com/profile/yurirocha15)



Education

- Sep. 2018 – **M.Sc., Electrical and Computer Engineering**, *Sungkyunkwan University*, Suwon, South Korea.
Aug. 2020 (expected)
 - *Research*: Robot Mental Simulation for Autonomous Learning and Planning
 - *Courses*: Neural Networks, Machine Learning, Robotics, Linear Systems, Advanced Probability and Random Processes
 - *Advisor*: Prof. Tae-Yong Kuc
 - *GPA*: 4.4/4.5
- Mar. 2011 – **B.Sc., Control and Automation Engineering**, *University of Brasilia*, Brasilia, Brazil.
Dec. 2016
 - *Research*: Methods for visual communication and cooperative control between humanoid robots
 - *Courses*: Computer Vision, Digital Control, Object-Oriented Programming, Computer Architecture
 - *Advisor*: Prof. Mariana Costa Bernardes
 - *GPA*: 4.1/5.0
- Sep. 2014 – **Exchange B.Sc., Computer Engineering**, *Sungkyunkwan University*, Suwon, South Korea.
Aug. 2015
 - *Courses*: System Programming, Computer Graphics, Microprocessors
 - *GPA*: 4.1/4.5

Professional Experience

Vocational

- Aug. 2016 – **Developer**, *Moringa Digital*, Brasilia, Brazil.
Jul. 2017 *Function*:
 - Developed a web service in NodeJS to automate the integration between the database of the company and client databases. Worked directly with client's technology team to set goals and deadlines;
 - Back-end development of several websites*Acquired Knowledge*:
 - Javascript, NodeJS, MySQL, ASP and HTML.
- Jul. 2015 **Intern**, *Hyundai Motor Company*, Namyang, South Korea.
Function:
 - Analyzed the car assembly line and proposed a new automating process.*Acquired Knowledge*:
 - Car assembly process and Methods of research and development of new products;

Miscelaneous

- Aug. 2015 – **Team Leader**, *UnBeatables – Humanoid Robot Soccer*, Brasilia, Brazil.
Dec. 2016
 - Team leader for the UnBeatables team, that participated in the Robocup competition in the context of the Standard Platform League - DropIn. Coordinated the activities of the team, developed code for participation in competitions (Robocup and LARC) and performed administrative tasks;
 - Developed the code architecture with different threads running in parallel, TCP communication and integration of a new humanoid motion algorithm. The code development was done in C++ and Python;

Research Experience

- Sep. 2018 – **Control and Robotics Lab**, *Graduate Student Researcher*, Sungkyunkwan University.
Present
 - Took part on the development of a Semantic Knowledge Framework for environmental and internal representation;
 - Created an automatic mental simulation system, allowing robots to simulate himself and the environment without human aid. Done using the ROS system and Gazebo Simulator.
 - Developed Reinforcement Learning algorithms for navigation and hybrid planning methods.
- Jan. 2014 – **Laboratory of Robotics and Automation**, *Undergraduate Student Researcher*, University of Brasilia.
Dec. 2016
 - Derived the mathematical definition for bi-manual manipulation by using the dual quaternion algebra on the NAO robot, mainly using the dual cooperative task-space;
 - Implemented control strategies on NAO platform and on Simulated environment V-Rep. In this context, also studied strategies for singularity avoidance and joint limit avoidance. The project was done using the ROS system.
 - Developed algorithms for robot vision, implemented on NAO with OpenCV.

Social Engineering Activities

- Aug. 2015 – **Team Leader**, *UnBeatables – Humanoid Robot Soccer: Social Activities*, Brasilia, Brazil.
Dec. 2016
 - Went to schools, children hospitals and science fairs to showcase our robot and to inspire kids following STEM careers in their future.
- Jan. 2013 – **Voluntary Teacher**, *Electron Project*, Brasilia, Brazil.
Aug. 2014
 - Gave lessons at Electronics Laboratory for high school students attending public schools of Federal District, encouraging them to learn about and apply for Engineering Programs at University;

Publications

Peer-Reviewed Conferences

Y. G. Rocha and T. Y. Kuc. Mental simulation for autonomous learning and planning based on triplet ontological semantic model. *CEUR Workshop Proceedings*, 2487:65–73, 2019.

Y. G. Rocha, S.-H. Joo, E.-J. Kim, and T.-Y. Kuc. Automatic generation of a simulated robot from an ontology-based semantic description. *제어로봇시스템학회 국제학술대회 논문집*, pages 1340–1343, 2019.

C. M. de Farias*, Y. G. Rocha*, L. F. C. Figueredo, and M. C. Bernardes. Design of singularity-robust and task-priority primitive controllers for cooperative manipulation using dual quaternion representation. In *2017 IEEE Conference on Control Technology and Applications (CCTA)*, pages 740–745. IEEE, 2017.

Grants and Awards

- Dec. 2019 **Award for Academic Achievement as a Korean Government Scholarship Student.**
Received in recognition of academic achievement - Granted by the Korean Ministry of Education
- Sep. 2017 – **Korean Government Scholarship Program (KGSP) for Graduate Students Grantee.**
Aug. 2020 *Three years scholarship as a Graduate Student at Sungkyunkwan University - Granted by the National Institute for International Education (NIIED)*

Languages

Portuguese **Native**
English **Fluent**
Korean **Advanced**

TOEFL IBT Score: 114/120

TOPIK 5