

Víctor Massagué Respal

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EDUCATION

INNOPOLIS UNIVERSITY | MASTER IN ROBOTICS WITH HONOURS

GPA: 3.74/4.00 | Aug. 2018 - July 2020 | Innopolis, Russia

INNOPOLIS UNIVERSITY | EXCHANGE PROGRAM - BACHELOR IN COMPUTER SCIENCE

Aug. 2017 - Jun. 2018 | Innopolis, Russia

POLYTECHNIC UNIVERSITY OF CATALONIA | BACHELOR IN COMPUTER SCIENCE - COMPUTING SPECIALIZATION

Sept. 2014 - Jun. 2018 | Barcelona, Spain

PUBLICATIONS

THESIS

- Víctor Massagué Respal. **"Unmanned Aerial Vehicle Path Planning for Exploration Mapping."** Master's Thesis, Innopolis University, 2020
- Víctor Massagué Respal. **"Quoridor agent using Monte Carlo Tree Search."** Bachelor's thesis, Universitat Politècnica de Catalunya, 2018. [pdf | Github]

PREPRINT

- Víctor Massagué Respal, Dmitry Devitt, and Roman Fedorenko. **"Unmanned Aerial Vehicle Path Planning for Exploration Mapping."**, 2020. [pdf | video] (Accepted at NIR 2020)

CONFERENCE

- Víctor Massagué Respal, Sami Sellami, and Ilya Afanasyev. **"Implementation of Autonomous Visual Detection, Tracking and Landing for AR. Drone 2.0 Quadcopter."** In The 12th International Conference on the Developments in eSystems Engineering, August 2019. [pdf | Github]
- Víctor Massagué Respal, Joseph Alexander Brown, and Hamna Aslam. **"Monte Carlo Tree Search for Quoridor."** In 19th International Conference on Intelligent Games and Simulation, GAME-ON, September 2018. [pdf | Github]

EXPERIENCE

ROBOTICS ENGINEER | AUTONOMOUS TRANSPORT SYSTEMS LAB

Aug. 2020 – Present | Innopolis University, Russia

Development of algorithms and software for autonomous UAV indoor and outdoor inspections.

TEACHING ASSISTANT | DYNAMICS OF NON-LINEAR SYSTEMS

Aug 2020 – Dec 2020 | Innopolis University, Russia

Course that teaches fundamentals of robotics to first year master students and forth year bachelor students.

RESEARCH INTERN | AUTONOMOUS TRANSPORT SYSTEMS LAB

June 2019 – July 2019 | Innopolis University, Russia

During the internship, a complete algorithm based on Next-Best-View planner was developed to explore, using the drone DJI M100, a bounded unknown area equipped with Velodyne LIDAR to build a 3D map online of the environment.

SELECTED PROJECTS

THE ROLE OF MODULARITY AND NEURO-REGULATION FOR THE PRODUCTION OF MULTIPLE BEHAVIORS | EXPERIMENTATION OF NEURO-MODULARITY FOR PRODUCING DIFFERENT BEHAVIORS

April 2020 - May 2020 | Innopolis University, Innopolis, Russia

The project involves the implementation of regulatory networks of this type and the realization of experiments involving the production of different behaviors. [pdf | Github]

GEOMETRIC AND STIFFNESS MODELING AND DESIGN OF CALIBRATION EXPERIMENTS FOR THE 7 DOF SERIAL MANIPULATOR KUKA IIWA 14 R820 | CALIBRATION PROCESS FOR NOISE REDUCTION

Feb 2019 - May 2019 | Innopolis University, Innopolis, Russia

The present project deals with the elastostatic modeling and calibration experiment of industrial manipulators using an optimal selection of measurements pose for the calibration procedure. [pdf | Github]

STANCE DETECTION IN CATALAN AND SPANISH TWEETS | SIMPLE TECHNIQUE FOR STANCE DETECTION USING INDEPENDENCE OF CATALONIA TWEETS

Nov 2017 - Dec 2017 | Innopolis University, Innopolis, Russia

Stance is given an ongoing interaction, the way speakers place themselves in it. It is described a simple technique for stance detection using Independence of Catalonia tweets. It is used word2vec word embedding features for this detection. The system had produce a best result for Spanish tweets as compare to other participants in IberEval 2017. [pdf | Github]

ROBOLANG | PARSER FOR A ROBOT PROGRAMING LANGUAGE

Feb 2017 - June 2017 | Polytechnic University of Catalonia, Barcelona, Spain

Worked with two colleagues developing a parser for a robot and an implementation of a simulator to test it. We were provided with a NXT Lego Mindstorm. The project was done with Java and ANTLR3. [Github]

DOCUMENT SIMILARITY | ALGORITHM TO DETECT SIMILARITY BETWEEN DOCUMENTS

Sept 2016 - Dec 2016 | Polytechnic University of Catalonia, Barcelona, Spain

Detecting similarity between documents using hashing (Jaccard Similarity, Minhash Similarity and LSH Similarity). The project has been done with C++. [Github]

HETESIM | UI TO DISPLAY, MODIFY AND SEARCH NODES IN A GRAPH

Feb 2016 - May 2016 | Polytechnic University of Catalonia, Barcelona, Spain

HeteSim is a program to make relational (and normal/simple) searches in a database composed as a graph, using the hetesim measure for relatedness in heterogeneous graphs. The database used for the implementation is the collection of names from different items (of different types) from a computer science public library. [Github]

HOME AUTOMATION MODEL | AN INTELLIGENT HOME MODEL WITH ARDUINO

May 2013 - Dec 2013 | INS Molí de la Vila, Capellades, Spain

It consists in a model of 80x50cm of a house, applying different automatons for instance sensors for the lights of the garden when it is getting dark or an automated garage door when a car gets closer. The whole project is composed of two Arduino cells.

SKILLS

TECHNICAL SKILLS

Proficient with:

Python • C++ • Matlab • \LaTeX
• Java • ROS • Git • Linux

Familiar with:

MIPS • C • Android • Arduino
Prolog • Haskell • Bash • Docker

SPOKEN & WRITTEN SKILLS

Native:

Catalan, Spanish

Advanced:

English

SCHOLARSHIPS/AWARDS

FULL SCHOLARSHIP FOR GRADUATE STUDIES | INNOPOLIS UNIVERSITY

Aug 2018 - Jun 2020 | Innopolis, Russia

DIPLOMA FOR OUTSTANDING ACADEMIC ACHIEVEMENTS IN FALL SEMESTER 2019 | INNOPOLIS UNIVERSITY

Jan 2020 | Innopolis, Russia

DIPLOMA FOR OUTSTANDING ACHIEVEMENTS AND PRICELESS CONTRIBUTION TO STUDENT COMMUNITY AND CAMPUS LIFE IN INNOPOLIS UNIVERSITY IN YEAR OF 2020 | INNOPOLIS UNIVERSITY

July 2020 | Innopolis, Russia

LINKS

Personal Website which contains detailed information of my professional career

Research Gate / Google Scholar which contains my publications and current research projects

Github which contains open-source codes of some of my projects