

Saboia da Silva, **Maira**

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Education

The State University of New York at Buffalo

Buffalo, NY, United States

PH.D IN COMPUTER SCIENCE AND ENGINEERING

Aug. 2014 - Present

SUPERVISOR: DR. NILS NAPP

State University of Campinas

Campinas, SP, Brazil

M.S. IN COMPUTER SCIENCE

Jul. 2009 - Jul. 2011

SUPERVISOR: DR. ALEXANDRE XAVIER FALCÃO

State University of Pernambuco

Recife, PE, Brazil

B.S. IN COMPUTER ENGINEERING

Jul. 2004 - Jun. 2009

SUPERVISOR: DR. CARLOS ALEXANDRE BARROS DE MELLO

Publications

- **SABOIA, M.**, THANGAVELU, V. AND NAPP, N., AUTONOMOUS MULTI-MATERIAL CONSTRUCTION WITH A HETEROGENEOUS ROBOT TEAM. INT. SYMP. ON DISTRIBUTED AUTONOMOUS ROBOTIC SYSTEMS (DARS 2018)
- **SABOIA, M.**, THANGAVELU, V., GOSRICH, W. AND NAPP, N., 2018. AUTONOMOUS ADAPTIVE MODIFICATION OF UNSTRUCTURED ENVIRONMENTS. ROBOTICS: SCIENCE AND SYSTEMS (RSS 2018)
- THANGAVELU, V., LIU, Y., **SABOIA, M.** AND NAPP, N., 2018, MAY. DRY STACKING FOR AUTOMATED CONSTRUCTION WITH IRREGULAR OBJECTS. IN 2018 IEEE INTERNATIONAL CONFERENCE ON ROBOTICS AND AUTOMATION (PP. 1-9) (ICRA 2018)
- LIU, Y., **SABOIA, M.**, SCHATZ, K., PAUL, M.J. AND NAPP, N., 2016. BIOMETRIC PATTERNS IN LONG-EVANS RATS FOR AUTOMATIC BEHAVIOR ANALYSIS. VISUAL OBSERVATION AND ANALYSIS OF VERTEBRATE AND INSECT BEHAVIOR, 2016, ICPR – INT. CONFERENCE ON PATTERN RECOGNITION, PP.25-28 (ICPR 2016)
- NEVES, R., MELLO, C.A.B., **SABOIA, M.** AND BEZERRA, B., 2009. THRESHOLDING THE COURTESY AMOUNT OF BRAZILIAN BANK CHECKS BASED ON TSALLIS ENTROPY. IEEE LATIN AMERICA TRANSACTIONS, 7(6)
- NEVES, R.F., MELLO, C.A.B., **SABOIA, M.** AND BEZERRA, B.L., 2008, OCTOBER. A NEW ALGORITHM TO THRESHOLD THE COURTESY AMOUNT OF BRAZILIAN BANK CHECKS. IN SYSTEMS, MAN AND CYBERNETICS, 2008 (PP. 1226-1230) (IEEE SMC 2018)
- NEVES, R.F.P., MELLO, C.A.B., **SABOIA, M.** AND BEZERRA, B.L.D., 2008, JUNE. A NEW TECHNIQUE TO THRESHOLD THE COURTESY AMOUNT OF BRAZILIAN BANK CHECKS. IN SYSTEMS, SIGNALS AND IMAGE PROCESSING, 2008. IWSSIP 2008. 15TH INTERNATIONAL CONFERENCE ON (PP. 93-96) (IWSSIP 2008)

Scholarships & Awards

2018	Finalist , BEST SYSTEMS PAPER AWARD AT THE ROBOTICS CONFERENCE: SCIENCE AND SYSTEMS (RSS)	USA
2014-2018	PhD. Scholarship , SCIENCE WITHOUT BORDERS - SWB/LASPau	USA
2009-2011	M.S Scholarship , SÃO PAULO RESEARCH FOUNDATION – FAPESP	Brazil
2006-2009	B.S Scholarship , NATIONAL COUNCIL FOR SCIENTIFIC AND TECHNOLOGICAL DEVELOPMENT – CNPQ	Brazil

Presentations

Autonomous Multi-Material Construction with a Heterogeneous Robot Team

CU Boulder, USA

INT. SYMP. ON DISTRIBUTED AUTONOMOUS ROBOTIC SYSTEMS (DARS)

2018

Bio-Inspired Multi-Material Construction

The Rockefeller University, USA

SOCIAL EVOLUTION AND BEHAVIOR COURSE

2018

Autonomous adaptive modification of unstructured environments

CMU, USA

WOMEN IN ROBOTICS IV WORKSHOP AT ROBOTICS: SCIENCE AND SYSTEMS (RSS)

2018

Dry Stacking Strategies for Autonomous Construction

MIT, USA

THE WHAT WITHOUT THE HOW: SPECIFYING PLANNING PROBLEMS IN ROBOTICS WORKSHOP

2017

AT ROBOTICS: SCIENCE AND SYSTEMS (RSS)

Robotic System For Autonomous Construction Using Irregular found Objects

Northeastern University, USA

POSTER AT NEW ENGLAND MANIPULATION SYMPOSIUM (NEMS)

2017

Research Projects

Adaptive Multi-Robot Autonomous Modification of Unstructured Environments

PROPOSED METHODS TO PERFORM AUTONOMOUS CONSTRUCTION IN IRREGULAR TERRAIN AND DESIGNED A HETEROGENEOUS ROBOTIC SYSTEM THAT ALLOWS EFFECTIVE EVALUATION OF THESE METHODS AT A PHYSICAL IMPLEMENTATION LEVEL. THE HETEROGENEOUS ROBOTIC TEAM IS COMPOSED OF TWO AUTONOMOUS ROBOTS THAT ARE ABLE TO MANIPULATE MATERIAL OF DIFFERENT PHYSICAL PROPERTIES (RIGID AND AMORPHOUS MATERIALS)

Buffalo, NY, USA

2016-Present

KEYWORDS: ROBOT DESIGN, SYSTEM DESIGN, AUTONOMY, MOTION PLANNING, TASK ALLOCATION, MANIPULATION, ROBOTIC VISION, BIO-INSPIRED ROBOTICS

Strategies for Dry-Stacking Structures with Irregular Objects

PROPOSED AN ASSEMBLY PLANNING METHOD TO DRY STACK IRREGULAR RIGID OBJECTS IN A 2D SIMULATION ENVIRONMENT, GIVEN A HIGH LEVEL TARGET STRUCTURE

Buffalo, NY, USA

2016-Present

KEYWORDS: AUTONOMOUS CONSTRUCTION, IRREGULAR OBJECTS, SIMULATION, GEOMETRICAL ANALYSIS, PHYSICAL ANALYSIS, DRY STACKING

Deep Learning Based Automated Re-Identification Techniques of Biometric Color Patterns in Long-Evans Rats

PROPOSED A RE-IDENTIFICATION APPROACH FOR BEHAVIOUR ANALYSIS OF LONG-EVANS LAB RATS THAT COMBINES A DEEP LEARNING CLASSIFIER WITH IMAGE SIMILARITY TECHNIQUES

Buffalo, NY, USA

2015-2016

KEYWORDS: DEEP LEARNING, SIAMESE NETWORKS, SIMILARITY MEASUREMENT, LONG-TERM TRACKING, DATA ANALYSIS, ANIMAL BIOMETRICS

Clustering of pixels by image foresting transform and its application in background segmentation of natural images

PROPOSED A NEW METHODOLOGY FOR AUTOMATIC EXTRACTION OF DESIRED OBJECTS IN NATURAL IMAGES. A FUZZY MODEL BASED ON THE IMAGE FORESTING TRANSFORM METHOD IS USED TO CLASSIFY THE PIXELS AS OBJECT OR BACKGROUND.

Campinas, SP, BR

2009-2011

KEYWORDS: GRAPHS, CLUSTERING, IMAGE PROCESSING, IMAGE COLOR ANALYSIS, OBJECT SEGMENTATION, CLASSIFICATION ALGORITHMS

Thresholding Algorithms for Bank Checks

PROPOSED APPROACH USES HISTOGRAM SPECIFICATION AND TSALLIS ENTROPY TO FIND THE BEST THRESHOLD VALUE IN THE THRESHOLDING PHASE OF THE CHECK COURTESY AMOUNT

Recife, PE, BR

2007-2009

KEYWORDS: IMAGE PROCESSING, IMAGE COLOR ANALYSIS, OBJECT SEGMENTATION, ENTROPY, CLASSIFICATION ALGORITHMS

Work Experience

Padtec

JUNIOR SYSTEMS ANALYST

Campinas, SP, BR

Nov. 2011 - Jun. 2014

EMBEDDED SYSTEM DEVELOPMENT FOR OPTICAL NETWORK DEVICES AND SYSTEMS BASED ON UNIX (C/C++, PYTHON)

Foundation for Technological Innovation

INTERN SYSTEMS ANALYST

Recife, PE, BR

Feb. 2008 - Jan. 2009

DEVELOPMENT AND TESTING OF WEB APPLICATIONS DESIGNED FOR PERSONAL DIGITAL ASSISTANTS (PDA) (C#, ASP.NET, ADO.NET)

Teaching Experience

Lecturer: Introduction to Computer Programming

THE STATE UNIVERSITY OF NEW YORK AT BUFFALO

Buffalo, NY, USA

May. 2018 - Jul. 2018

Undergraduate Teaching Assistant: Image Processing

UNIVERSITY OF PERNAMBUCO

Recife, PE, BR

Aug. 2008 - Dec. 2008

Undergraduate Teaching Assistant: Imperative Programming - C language

UNIVERSITY OF PERNAMBUCO

Recife, PE, BR

Feb. 2008 - Jun. 2008

Software Skills

Robotics and Computer Vision

ROBOT OPERATING SYSTEM (ROS) • OPENCV • TENSORFLOW • POINT CLOUD LIBRARY • GAZEBO • PYBULLET

Programming

PYTHON • C/C++ • MATLAB • JAVA • SHELL • EMBEDDED C • HASKELL • VHDL • C# • JAVASCRIPT • SQL

Frameworks

ANDROID STUDIO • ARDUINO PROGRAMMING • \LaTeX

References

Dr. Nils Napp

ASSISTANT PROFESSOR

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING, SUNY AT BUFFALO

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Dr. Karthik Dantu

ASSISTANT PROFESSOR

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING, SUNY AT BUFFALO

EMAIL: KDANTU@BUFFALO.EDU

TEL: +1 (716) 645-2670

106 DAVIS HALL, BUFFALO, NY 14260

Dr. Kirstin Hagelskjær Petersen

ASSISTANT PROFESSOR

SCHOOL OF ELECTRICAL AND COMPUTER ENGINEERING, CORNELL UNIVERSITY

EMAIL: KIRSTIN@CORNELL.EDU

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