CURRICULUM VITAE OF

J. Leonardo Bobadilla

School of Computing and Information Sciences

Education

Ph.D.	University of Illinois at Urbana-Champaign	Computer Science	2013
M.Sc.	National University of Colombia	Statistics	2007
B.E.	National University of Colombia	Computer Engineering	2004

Full-Time Academic Experience

- 8/2013-Present. Assistant Professor in the School of Computing and Information Sciences.

Employment Record at FIU

- 8/2013-Present. Assistant Professor in the School of Computing and Information Sciences.

Publications in Discipline

Publications in Journals and Refereed Proceedings

Journals

[1] Planning, Schedulling, and Deploying for Computational Ferrying S. Zanlongo, A. Wilson, L. Bobadilla, T. Sookoor. In *International Journal of Next-Generation Computing*, To appear.

[2] Modeling and Analyzing Occupant Behaviors in Building Energy Analysis Using a State Space Approach and Non-Invasive Sensing. T. Carmenate, M. M. Rahman, L. Bobadilla, D. Leante, and A. Mostafavi. In *International Journal of Next-Generation Computing*, To appear.

[3] Stochastic Multi-Robot Patrolling with Limited Visibility. T. Alam, M.M Rahman, L. Bobadilla, B. Rapp. In *Journal of Intelligent & Robotic Systems*, to appear.

[4] Space-efficient filters for mobile robot localization from discrete limit cycles T. Alam, L. Bobadilla, D.A. Shell. In *IEEE Robotics and Automation Letters*, Volume: 3, Issue: 1, pages 257-264, Jan. 2018

[5] An Automated Methodology for Worker Path Generation and Safety Assessment in Construction Projects. M. M. Rahman, T. Carmenate, L. Bobadilla, S. Zanlongo, and A. Mostafavi. In *IEEE Journal of Automation Science and Engineering*, Volume: PP, Issue: 99, Pages: 1 - 13, Apr. 2018.

[6] Modeling Occupant-Building-Appliance Interaction for Energy Waste Analysis. T. Carmenate, P. Inyim, N. Pachekar, G. Chauhan, L. Bobadilla, M. Batouli. In *Procedia Engineering* Volume: 145, Pages: 42-49, 2016

[7] Combinatorial filters: Sensor beams, obstacles, and possible paths. B. Tovar, F. Cohen, L. Bobadilla, J. Czarnowski, and S. M. LaValle. *ACM Transactions on Sensor Networks*, Volume: 10, Issue: 3, Apr. 2014.

Journal Publications Under review

[8] A Data-Driven Deployment and Planning Approach for Underactuated Vehicles in Marine Environments. T. Alam, G. M. Reis, L. Bobadilla, and R. N. Smith. In *IEEE Journal of Oceanic Engineering*, submitted.

Conference Papers

[9] Multi-Robot Scheduling and Path-Planning for Non-Overlapping Operator Attention S. A. Zanlongo, P. Long, F. Abodo, T. Padir, L. Bobadilla. In *IEEE International Conference on Robotic Computing*, 2018

[10] A Data-Driven Deployment Approach for Persistent Monitoring in Aquatic Environments T. Alam, G. M. Reis, L. Bobadilla, and R. N. Smith In *IEEE International Conference on Robotic Computing*, 2018

[11] Multi-vehicle patrolling with limited visibility and communication constraints T Alam, MM Rahman, L Bobadilla, B Rapp. In *Military Communications Conference*, pages 465-470, 2017.

[12] Relay vehicle formations for optimizing communication quality in robot networks. MM Rahman, L Bobadilla, F Abodo, B Rapp. In *IEEE International Conference on Intelligent Robots and Systems*, pages 6633-6639, 2017.

[13] Increasing persistent navigation capabilities for underwater vehicles with augmented terrain-based navigation GM Reis, M Fitzpatrick, J Anderson, J Kelly, L Bobadilla, RN Smith. In *IEEE OCEANS* , pages 1-8, 2017

[14] Multi-robot Planning for Non-overlapping Operator Attention Allocation SA Zanlongo, M Rahman, F Abodo, L Bobadilla. In *IEEE International Conference on Robotic Computing*, pages 109-112, 2017

[15] Augmented Terrain-Based Navigation to Enable Persistent Autonomy for Underwater Vehicles GM Reis, M Fitzpatrick, J Anderson, L Bobadilla, RN Smith. In *IEEE International Conference on Robotic Computing*, pages 292-298, 2017

[16] Minimalist robot navigation and coverage using a dynamical system approach T Alam, L Bobadilla, DA Shell. In *IEEE International Conference on Robotic Computing*, pages 249-256 2017

[17] Scheduling and path planning for computational ferrying SA Zanlongo, AC Wilson, L Bobadilla, T Sookoor. In *Military Communications Conference*, pages 636-641 2016.

[18] Establishing line-of-sight communication via autonomous relay vehicles MM Rahman, L Bobadilla, B Rapp. In *Military Communications Conference*, pages 642-647, 2016.

[19] Data Correlation and Comparison from Multiple Sensors Over a Coral Reef with a Team of Heterogeneous Aquatic Robots AQ Li, I Rekleitis, S Manjanna, N Kakodkar, J Hansen, G Dudek, L Bobadilla, J Anderson, R N Smith. In *International Symposium on Experimental Robotics* , pages 717-728, 2016.

[20] Sampling-based planning algorithms for multi-objective missions MM Rahman, L Bobadilla, B Rapp. In *IEEE International Conference on Automation Science and Engineering* , pages 709-714, 2016

[21] Modeling and Analyzing Occupant Behaviors in Building Energy Analysis Using an Information Space Approach. T. Carmenate, M. M. Rahman, L. Bobadilla, D. Leante, and A. Mostafavi. In *IEEE International Conference on Automation Science and Engineering*, pages 425-431, 2015

[22] Discrete-Event and Motion Planning Methodology for Automated Safety Assessment in Construction Projects. M. M. Rahman, T. Carmenate, L. Bobadilla, S. Zanlongo,and A. Mostafavi. In *IEEE International Conference on Robotics and Automation*, pages 3849-3855, 2015

[23] Distributed Multi-Robot Area Patrolling in Adversarial Environments T. Alam, M. Edwards, L. Bobadilla, and D. Shell. In *CPS Week: Workshop on Robotic Sensor Networks*, 2015.

[24] Verified Planar Formation Control Algorithms by Composition of Primitives. L. Bobadilla, T. T. Johnson, and A. LaViers. *AIAA: Guidance, Navigation, and Control*, pages 1541, 2015.

[25] Geofit: Verifiable Fitness Challenges L. Bobadilla, T. T. Johnson, and A. LaViers. *IEEE 11th International Conference on Mobile Ad Hoc and Sensor Systems (MASS)*, 2014.

[26] Ex-Ante Assessment of Struck-by Safety Hazards in Construction Projects: A Motion Planning Approach. M. M. Rahman, T. Carmenate, L. Bobadilla, and A. Mostafavi. *IEEE International Conference on Automation Science and Engineering*, pages 277-282, 2014

[27] Predictive Assessment and Proactive Monitoring of Struck-By Safety Hazards in Construction Sites: An Information Space Approach. L. Bobadilla, A. Mostafavi, T. Carmenate, and S. Bista. *15th International Conference on Computing in Civil and Building Engineering*, pages 989-996, 2014.

[28] Stochastic Modeling, Control, and Verification of Wild Bodies. D. Gierl, L. Bobadilla, O. Sanchez, and S. M. LaValle. In *IEEE International Conference on Robotics and Automation*, pages 549-556, 2014

[29] Controlling wild mobile robots using virtual gates and discrete transitions. L. Bobadilla, F. Martinez, E. Gobst, K. Gossman, and S. M. LaValle. In *American Control Conference*, pages 743-749, 2012.

[30] Minimalist multiple target tracking using directional sensor beams. L. Bobadilla, O. Sanchez, J. Czarnowski, and S. M. LaValle. In *IEEE International Conference on Intelligent Robots and Systems*, pages 3101-3107, 2011.

[31] Controlling wild bodies using linear temporal logic. L. Bobadilla, O. Sanchez, J. Czarnowski, K. Gossman, and S. M. LaValle. In *Robotics: Science and Systems*, pages 17-24, 2011.

[32] Manipulating ergodic bodies through gentle guidance. L. Bobadilla, K. Gossman, and S. M. LaValle. In *IEEE Conference on Robot Motion and Control*, pages 273-282, 2011.

[33] Toward a Compositional Theory of Sensor-Based Robotic Systems (Extended Abstract). L. Bobadilla, O. Sanchez, S. M. LaValle. In *RSS 2010 Workshop Motion Planning: From Theory to Practice*, 2010

[34] Gene Selection Based On Category Detection Of Gene Ontology. O. Sanchez, C. Payan, L. Bobadilla, F. Gonzalez, E. Barreto. In *Proceedings of the seventh international conference for the Critical Assessment of Microarray Data Analysis, CAMDA* 2007.

[35] Characterizing and Predicting Catalytic Residues in Enzyme Active Sites Based on Local Properties: A Machine Learning Approach. L. Bobadilla, F. Nino, E. Cepeda and M. A. Patarroyo. In *IEEE 7th International Symposium on BioInformatics & BioEngineering* 2007.

[36] A Novel Methodology for Characterizing and Predicting Protein Functional Sites. L. Bobadilla, F. Nino, E. Cepeda and M. A. Patarroyo. In *2007 IEEE International Conference on Bioinformatics and Biomedicine* 2007.

[37] A Genetic Word Clustering G. Hernandez, L. Bobadilla; O. Sanchez. In *Proceedings of the IEEE Congress on Evolutionary Computation (CEC)* 2005.

Research Funded

1. DHS Center for Advancing Education and Studies on Critical Infrastructures Resilience (CAESCIR) **co-PI**. (PI Jason Liu). $1'200,000.
2. ARO 70457-RT-REP: Research, Education and Workforce Training for Engagement in the Cyber-learning Environment **co-PI**. (PI S.S. Iyengar). $300,000.
3. ARO. STIR: Topic 5.3.1 Supporting Army Tactical Mission: Gathering and Processing Sensor Data with Unmanned Relay Vehicles using Line-of-Sight Communication. Army Research Office. **PI**. $50,000.
4. Ware Foundation. Robotics and Computer Science Experiences for Students in Riviera School. **PI**. $25,000.00.
5. NSF. RET SITE: Research Experience for Teachers in Cyber-enabled technologies. **Senior Personnel**. (PIs: Niki Pissinou and S.S. Iyengar). $498,000.
6. NSF. REU SITE: Research Experience for Undergraduates in Cyber-enabled technologies. **Senior Personnel**. (PIs: Niki Pissinou and S.S. Iyengar). $498,000

Grant Proposals under Review

1. NSF EAGER: Authentication through autonomic responses in a Holographic VR/AR Computing Framework. **PI**. $300,000.

Professional Honors, Prizes, Fellowships

University of Illinois at Urbana-Champaign
- Illinois Student Undergraduate Research (ISUR) Graduate Mentor Award 2012-2013

Colombian Ministry of Education
- Top ten student graduate in Computer Engineering in Colombia, ECAES, 2004

National University of Colombia
- Outstanding Graduate Students Scholarship, College of Sciences, 2006–2007
- Best admission score in College of Sciences Master Programs (4.96/5), 2005
- Honorary Enrollment and Scholarship, College of Engineering, 1999, 2001, 2002, 2003

Other Professional Activities and Public Service

Ph.D. Graduated

Md. Mahbubur Rahman (Ph.D., FIU, CS, graduated in 2017, now at TE Connectivity)

Tauhidul Alam (Graduating in May 2018)

Gregory Reis (Graduating in Summer 2018)

Master Graduated

Triana Carmenate (M.S., FIU, CS, graduated in 2016, placement of employment at Lockheed Martin)

Current Ph.D Students

Sebastian Sanlongo (Ph.D Fifth year)

Undergraduate Student Advising Since at FIU (Incomplete)

Franklin Abodo (NSF REU, 2015)

Matthew Edwards (NSF REU, 2014)

Irvin Cardenas (Senior Project, Fall 2015)

Diana Leante (Senior Project, Fall 2015)

Dalaidis Hidalgo (Senior Project, Spring 2015)

Maria Presa (Senior Project, Spring 2015)

Dissertation/Thesis Committee Membership

1. Nico Saputro (ECE), Advised by Dr. Kemal Akkaya
2. Hasan Mahmud (CS), Advised by Dr. Shaolei Ren
3. Kianoosh Gholam(CS), Advised by Dr. Ram Iyengar
4. Chunqiu Zeng(CS), Advised by Dr. Tao Li
5. Georges Arsene Kamhoua(CS), Advised by Dr. Niki Pissinou
6. Abdur Rahman Bin Shahid(CS), Advised by Dr. Niki Pissinou
7. Leonardo Marmol(CS), Advisor: Raju Rangaswami
8. Wei Xue (CS), Advised by Dr. Tao Li

Teaching Experience

Florida International University, Miami, FL

Assistant Professor **Fall 2013-Present**

- Fall 2013 CAP 5610: Machine Learning.
- Fall 2014 CIS 6930: Planning Algorithms
- Spring 2014, Spring 2015 COP 4338: Programming III.
- Spring 2016 CNT 4713 Net-centric Computing
- Fall 2015, Spring 2016, Fall 2016, Spring 2017, Spring 2018: COT 5310 Theory of Computation I
- Fall 2017: COT 5407 Introduction to Algorithms

College Service

College Library Committee (2014-2015)

SCIS Service

SCIS Faculty Hiring Committee (2014-present)
SCIS Graduate Faculty Committee (2016-present)
Organizer AI Qualifying Exam
Organizer AI Qualifying Exam
Member Machine Learning/Data Mining Exam (2014-present)

Professional Service since at FIU

Asociate Editor: ICRA 2016, 2017
NSF Panel: 4 times
Program Committee Program Committee Member for the Machine Learning in Planning and Control of Robot Motion workshop (MLPC-2015)
Referee Service

- *IEEE Transactions on Robotics*
- *Autonomous Robots*
- *International Journal of Robotics Research*
- *IEEE American Control Conference (ACC)*
- *IEEE/RSJ International Conference on Intelligent RObots and Systems (IROS)*
- *International Conference on Robotics and Automation(ICRA)*
- *IEEE International Conference on Automation Science and Engineering*
- *IEEE Robotics and Automation Letters (RA-L)*

PROFESSIONAL MEMBERSHIPS

Institute for Electrical and Electronics Engineers (IEEE), Student Member, 2007–present

- IEEE Robotics and Automation Society (2008–present)