Nare Karapetyan
Curriculum Vitae

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<u>**Research Interests:**</u> Area Coverage, Marine Robotics, Multi-robot Systems, Path Planning, Exploration

EDUCATION

2016-current	**PhD in Computer Science**, University of South Carolina
2013-2015	**MSc in Computer and Information Science**, American University of Armenia (AUA)
	Thesis: "Area Coverage for Multi-robot Systems"
2008-2012	**BSc in Applied Mathematics and Informatics**, Yerevan State University (YSU)
	Thesis: "Global Value Numbering Optimization for WebKit Jit compiler"
02 - 05/2012	Visiting Undergraduate Student, Lomonosov Moscow State University, Moscow, Russia

EXPERIENCE

08/2016 - current	Research and Teaching Assistant, **University of South Carolina, Columbia**, SC, USA
03/2020 - 07/2020	Software Engineering Intern, **iRobot**, Pasadena, CA, USA
02/2015 -08/2016	Research and Teaching Associate, **American University of Armenia**, Yerevan, Armenia
05/2013 - 07/2014	Software Engineer, **Improvis LLC**, Yerevan, Armenia
09/2011 - 11/2012	Software Developer, **Ivannikov Institute of Russian Academy of Sciences (ISP RAS)**
01/2010 - 06/2011	Software Engineering Trainee, **Instigate LLC**, Yerevan, Armenia

AWARDS

2020-2021	JSPS Postdoctoral Fellowship for Research in Japan, Short Term Program
2020, Aug	Student Poster Competition Finalist, OCEANS'20 Singapore
2019, Oct	Third Prize in OCEANS'19 Seattle Student Poster Competition
2019	SPARC Graduate Research Grant, University of South Carolina
2017 - 2019	Armenian General Benevolent Union (AGBU), US Graduate Scholarship
2016 - 2019	Graduate Assistantship, University of South Carolina
2019, Nov	IROS Student and Developing Countries (SDC) Travel Award
2018, 2019	University of South Carolina Graduate School Travel Grant
2018, May	ICRA RAS Travel Award funded by the US NSF
2017, Oct	IROS Travel Award for Doctoral Consortium funded by the US NSF
07/2015	Calouste Gulbenkian Foundation, Short Term Conference Travel Grant
2013 – 2015	AUA/MoES full tuition fee scholarship, American University Of Armenia (AUA)
2014	Annual Presidential IT Award as Best Master Student in the IT sector, Armenia
09/2011 – 05/2012	Undergraduate Research Scholarship, ISP RAS
08/2011 – 12/2011	Nominal Award for building the "Mobot" mine detecting robot, ArmRobotics Competition
2009 – 2012	MoES full tuition fee scholarship, Yerevan State University

PUBLICATIONS
Fully-Refereed Conference Papers

[C9] Marios Xanthidis, **Nare Karapetyan**, Hunter Damron, Sharmin Rahman, James Johnson, Allison O'Connell, Jason M. O'Kane, and Ioannis Rekleitis; Navigation in the Presence of Obstacles for an Agile Autonomous Underwater Vehicle, *In IEEE International Conference on Robotics and Automation (ICRA)*, Paris, France,, 2020 (accepted)

[C8] **Nare Karapetyan**, Adam Braude, Jason Moulton, Joshua A. Burstein, Scott White, Jason M. O'Kane, and Ioannis Rekleitis, Riverine Coverage with an Autonomous Surface Vehicle over Known Environments, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Macau, China, 2019

[C7] **Nare Karapetyan**, Jason Moulton and Ioannis Rekleitis, Meander Based River Coverage by an Autonomous Surface Vehicle, Field and Service Robotics: Recent Advances in Research and Applications (FSR). Springer, Tokyo, Japan, 2019

[C6] Jason Moulton, **Nare Karapetyan**, Michail Kalaitzakis, Alberto Quattrini Li, Nikolaos Vitzilaios, Ioannis Rekleitis, Effects Modeling – Dynamic Autonomous Surface Vehicle Controls Under Changing Environmental Forces, Field and Service Robotics: Recent Advances in Research and Applications (FSR). Springer, Tokyo, Japan, 2019

[C5] Bharat Joshi, Sharmin Rahman, Michail Kalaitzakis, Brennan Cain, James Johnson, Marios Xanthidis, **Nare Karapetyan**, Alan Hernandez, Alberto Quattrini Li, Nikolaos Vitzilaios, Ioannis Rekleitis, Experimental Comparison of Open Source Visual-Inertial-Based State Estimation Algorithms in the Underwater Domain, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Macau, China, 2019

[C4] **Nare Karapetyan**, Jason Moulton, Jeremy Lewis, Alberto Quattrini Li, Jason O'Kane, Ioannis Rekleitis, Multi-robot Dubins Coverage with Autonomous Surface Vehicles, *In IEEE International Conference on Robotics and Automation (ICRA)*, Brisbane, Australia, 2018

[C3] Jason Moulton, **Nare Karapetyan**, Alberto Quattrini Li, Ioannis Rekleitis, External Force Field Modeling for Autonomous Surface Vehicles, *In International Symposium of Experimental Robotics (ISER)*, Buenos Aires, Argentina, 2018

[C2] **Nare Karapetyan,** Kelly Benson, Chris McKinney, Perouz Taslakian, Ioannis Rekleitis, Efficient Multi-Robot Coverage of a Known Environment, *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Vancouver, Canada, 2017

[C1] Nelson Baloian, Wolfram Luther, Daniel Biella, **Nare Karapetyan**, Jose A. Pino, Tobias Schreck, Nancy Hitschfeld, Exploring Collaboration in the Realm of Virtual Museums, *23rd International Conference on Collaboration and Technology (CRIWG),* Saskatoon, Canada, 2017

Editorials; Lightly-Refereed Conference and Workshop Papers
[E4] **Nare Karapetyan**, James Johnson, and Ioannis Rekleitis, Coverage Path Planning for Mapping of Underwater Structures with an Autonomous Underwater Vehicle, *In MTS/IEEE OCEANS Singapore*, 2020 (accepted to Student Poster Competition)

[E3] **Nare Karapetyan**, Jason Moulton, and Ioannis Rekleitis, Dynamic Autonomous Surface Vehicle Control and Applications in Environmental Monitoring, *In MTS/IEEE OCEANS Seattle*, WA, USA, 2019 (3nd prize at the Student Poster Competition)

[E2] Sharmin Rahman, **Nare Karapetyan**, Alberto Quattrini Li, and Ioannis Rekleitis, A Modular Sensor Suite for Underwater Reconstruction, *In MTS/IEEE OCEANS Charleston*, SC, USA, 2018

[E1] Jason Moulton, **Nare Karapetyan**, Sharon Bukhsbaum, Chris McKinney, Sharaf Malebary, George Sophocleous, Alberto Quattrini Li, and Ioannis Rekleitis, An Autonomous Surface Vehicle for Long Term Operations, *In MTS/IEEE OCEANS Charleston*, SC, USA, 2018

TEACHING EXPERIENCE

Instructor

Summer 2019	Robotics, Upward Bound Program, Eau Claire High School
Fall 2018	CSCE 274 Robotic Applications and Design, University of South Carolina
Summer 2015, Fall/Spring 2016	MATH111 Discrete Math, American University of Armenia (AUA)

Teaching Assistant

Fall 2016, 2017, Spring 2018	CSCE 145, 146 Algorithmic Design I, II , University of South Carolina
Spring/Fall 2015, 2016	ClS311(grad), CS211 Theory of Algorithms, AUA
Spring 2016	CIS332(grad), CS132 Theory of Communication Networks, AUA

CONFERENCES and TALKS

Nov 4 -8, 2019	IROS 2019 conference, Macao, Macau, China
Oct 27 - 31, 2019	OCEANS'19 conference, Seattle, WA, USA
Sept 26 - 27, 2019	1st Annual Computing@SEC Meeting at the University of Alabama, AL, USA
Aug 29-31, 2019	12th Conference on Field and Service Robotics, Tokyo, Japan
March 15, 2019	Public Lecture on Marine Robotics, AUA, Yerevan, Armenia
May 21 - 26, 2018	ICRA 2018 conference, Brisbane, Australia
April 15, 2018	Discover USC: Three-minute thesis, UofSC, Columbia, SC, USA
Sept 21 - 28, 2017	IROS and ROScon 2017 conference, Vancouver, Canada

WORKSHOPS and TRAININGS

Oct 1 - 04, 2019	Grace Hopper Celebration, Orlando, Florida
Jan 01 - 18, 2019	Bellairs 15th Annual Field Trials and Workshop, Holetown, Barbados
Aug 13 - 16, 2018	AQUA Workshop at the University of Minnesota (UMN), Minneapolis, MN, USA
Jun 28 - Jul 5, 2017	Deep Learning and Reinforcement Learning Summer School , Montreal, Canada
Jan 01 - 14, 2017	Bellairs 13th Annual Field Trials and Workshop, Holetown, Barbados
Feb 22 - 25, 2015	IBM Watson training , Yerevan, Armenia
Aug 23 - Sept 4, 2015	Machine Learning Summer School, Kyoto, Japan

SKILLS

Programming:	C/C++, Python, bash scripting, octave
Libraries:	STL, QT, OpenCV, Boost (GBL), scikit-learn
Tools, Technologies:	Robotics Operating System (ROS), GNU C++ compiler/debugger GCC and GDB, vim, SVN, git, LaTeX, ATOM, QT creator, StarUML, Microsoft VS (10, 12), Arduino
Languages:	Armenian (native), Russian (fluent), English (professional)

REFEREE SERVICES

- International Conference on Robotics and Automation, (ICRA19, ICRA20, RAL-ICRA19, RAL-ICRA20)
- Journal of Autonomous Robots, 2018 (AURO)
- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS17, IROS18, IROS19)
- Woman in Machine Learning Workshop at NIPS (WiML17)

ORGANIZATIONS

- IEEE student member
- Upsilon Pi Epsilon Honor Society for the Computing Sciences

VOLUNTEERING

Feb 2017 - current	701 Center for Contemporary Art - volunteering as an assistant for artists and the gallery
July14-17, 2019	Conference on Data and Applications Security (DBSec'19), Charleston, SC, USA
Sept 22 - 25, 2015	CRIWG 2015 conference , Yerevan, Armenia

NON-ACADEMIC

Sustainability   -   Scuba diving   -   Photography   -   Contemporary Art