Elena Corina Grigore

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Ph.D. Candidate, Yale University
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Research Interests

Robotics, machine learning, artificial intelligence, human-robot interaction, human-robot teaming, adaptive systems, reinforcement learning, user modeling.

Education

- **Doctor of Philosophy, Computer Science, Yale University, USA** 2012 – present
  Advisor: Brian Scassellati
  Area of study: Policy Search for Adaptive Robots in Human-Robot Teaming
- **Master of Philosophy, Computer Science, Yale University, USA** 2015
- **Master of Science, Computer Science, Yale University, USA** 2015
- **Master of Engineering with Study Abroad**
  Computer Science, University of Bristol, UK 2012
  Advisors: Kerstin Eder (University of Bristol, UK)
  Anthony G. Pipe (Bristol Robotics Laboratory, UK)
  Christopher Melhuish (Bristol Robotics Laboratory, UK)
  Thesis: *"I Robot, I Think"*
  4-year program encompassing my Bachelor's degree
  Study Abroad at University of California, San Diego (2010/2011)
  Master of Engineering with First Class Honors
- **Coventry University, UK** 2009
  Completed first year of Computing Honors Degree
  Highest scoring student in my cohort
  Transfer to University of Bristol at the end of my first undergraduate year

Publications

[12] **E. C. Grigore**, A. Pereira, J. J. Yang, I. Zhou, D. Wang, and B. Scassellati, "Verbal communication improves perceptions of friendship and social presence in human-robot interaction", in *Proceedings of the 16th International Conferences on Intelligent Virtual Agents (IVA)*, To appear, Los Angeles, USA, 2016.

[11] **E. C. Grigore** and B. Scassellati, "Constructing policies for supportive behaviors and communicative actions in human-robot teaming", in *Proceedings of the HRI Pioneers Workshop at the 11th ACM/IEEE International Conference on Human-Robot Interaction (HRI)*, Christchurch, New Zealand, 2016, pp. 615–616.

[10] ——, "Discovering the granularity of primitive actions from human motion data in human-robot teaming", In submission, 2016, September.

[9] A. Suman, R. Marvin, **E. C. Grigore**, H. Admoni, and B. Scassellati, "Robots can induce mimicry in humans depending on previous behavior", in *Proceedings of the 25th IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN)*, To appear, New York, USA, 2016, August 26 - 31.

[8] **E. C. Grigore**, "Modeling motivational states through interpreting physical activity data for adaptive robot companions", in *Proceedings of the 23rd International Conference on User Modelling, Adaptation and Personalization (UMAP)*, Dublin, Ireland: Springer, 2015, pp. 379–384.

[7] **E. C. Grigore**, A. Pereira, and B. Scassellati, "Modeling motivational states in adaptive robot companions", in *2015 AAAI Fall Symposium Series*, 2015.

[6] **E. C. Grigore** and B. Scassellati, "Maintaining engagement in shared goals with a personal robot companion through motivational state modeling", in *Proceedings of the Human-Robot Teaming Workshop at the 10th ACM/IEEE International Conference on Human-Robot Interaction (HRI)*, Portland, OR, 2015.

[5] B. Hayes, **E. C. Grigore**, A. Litoiu, A. Ramachandran, and B. Scassellati, "A developmentally inspired transfer learning approach for predicting skill durations", in *Proceedings of the 4th Joint IEEE International Conferences on Development and Learning and Epigenetic Robotics (ICDL-Epirob)*, IEEE, 2014, pp. 181–186.

[4] E. Short, K. Swift-Spong, J. Greczek, A. Ramachandran, A. Litoiu, **E. C. Grigore**, D. Feil-Seifer, S. Shuster, J. J. Lee, S. Huang, *et al.*, "How to train your dragonbot: socially assistive robots for teaching children about nutrition through play", in *Proceedings of the 23rd IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN)*, IEEE, 2014, pp. 924–929.

[3] **E. C. Grigore**, K. Eder, A. G. Pipe, C. Melhuish, and U. Leonards, "Joint action understanding improves robot-to-human object handover", in *Proceedings of the 26th IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, IEEE, 2013, pp. 4622–4629.

[2] **E. C. Grigore** and B. Scassellati, "Feasibility of sar approaches – helping children with learning tasks", in *Proceedings of International Workshop on Developmental Social Robotics (DevSor): Reasoning about Human, Perspective, Affordances and Effort for Socially Situated Robots at the 26th IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Tokyo, Japan, 2013, pp. 22–24.

[1] **E. C. Grigore**, K. Eder, A. Lenz, S. Skachek, A. G. Pipe, and C. Melhuish, "Towards safe human-robot interaction", in *Proceedings of the 12th Annual Towards Autonomous Robotic Systems (TAROS)*, Springer, 2011, pp. 323–335.

Honors and Awards

- **Tocher Fellowship, Yale University, USA** 2015
- **Tocher Fellowship, Yale University, USA** 2014
- **EPSRC (Engineering and Physical Sciences Research Council) Fellowship, UK** 2011
  Summer Research Project at the Bristol Robotics Lab, Bristol, UK
- **EPSRC Fellowship, UK** 2010
  Summer Research Project at the Bristol Robotics Lab, Bristol, UK
- **Head of Promotion Honorary Prize,**
  Piatra Neamț Computer Science High School, Romania 2008

Thesis

[Master's Thesis] **E. C. Grigore**, "I robot, i think", MASTERS THESIS University of Bristol, UK (work performed at the Bristol Robotics Lab, Bristol, UK), 2012.

Research Experience

- **Yale University, Social Robotics Laboratory, CT, USA**
  - *Reinforcement learning for human-robot teaming* 2014 – present
    Applying machine learning techniques to endow robots with learning capabilities needed when placed in new environments or faced with new tasks. Investigating techniques including direct policy search, hierarchical reinforcement learning, and value-approximation methods.
  - *User modeling for motivational states within a reinforcement learning framework* 2013 – 2015
    Designed a system for long-term robot companions that employs a model of users' daily motivational states within a reinforcement learning framework.
  - *Developed a robot for interaction with children in an educational setting* 2012 – 2014
    Built, assembled, and programmed research robot platform DragonBot for interaction with children. Performed human-robot interaction study at local schools.
- **University of Bristol and the Bristol Robotics Laboratory, Bristol, UK**
  - *Master of Engineering "I Robot, I Think" Thesis Project* 2011 – 2012
    Applied machine learning techniques to model users' intentions for object handovers in human-robot interaction scenarios.
  - *"I Robot... I Learn" Summer Research Project* 2011
    Implemented a machine learning algorithm for estimating the state of object handovers in human-robot interaction scenarios.
  - *"I Robot... and Beyond" Summer Research Project* 2010
    Investigated safety and liveness properties rooted in design verification principles for a human-robot interaction system.

Academic Service and Membership

- Conference Refereeing service
  - IEEE International Symposium on Robot and Human Interactive Communication 2016
  - Elsevier Cognitive Systems Research Journal 2016
  - ACM/IEEE International Conference on Human-Robot Interaction 2015 – 2016
  - Affective Computing and Intelligent Interaction 2015
  - IEEE/RSJ International Conference on Intelligent Robots and Systems 2014
- Membership in Professional Societies
  - Association for the Advancement of Artificial Intelligence 2014 – present
  - IEEE 2014 – present
  - Cognitive Science Society 2014 – present
- Outreach
  - World Science Festival, New York City 2014
  - Routine lab tours and open houses, Yale Social Robotics Lab, CT 2012 – present
  - Routine outreach activities involving robot demos at local schools, CT 2012 – present
- Book Reviewing
  - *Visual Analysis of Behaviour – From Pixels to Semantics*, by Gong S, Xiang T 2012

Teaching Experience and Mentorship

- Teaching Fellow (at Yale University, USA)
  - Mathematical Tools for Computer Science (CPSC 202A) 2014 – 2015
  - Intelligent Robotics (CPSC 473) 2013 – 2015
  - Intelligent Robotics Lab (CPSC 472) 2013
- Mentored five undergraduate students and a high-school student on research projects 2013 – 2015
- Point of contact for incoming Romanian students, University of Bristol, UK 2009 – 2012
- Mathematics student-teacher at Sydney Stringer School, Coventry, UK
  Students Associates Scheme 2009
- Course Representative, Coventry University, Coventry, UK
  Speaking on behalf of the student body 2008 – 2009

Conferences and Summer Schools Attended

- AAAI Fall Symposium Series
  Presented talk for accepted paper 2015
- Max Planck Institute for Intelligent Systems Machine Learning Summer School, Germany
  (**20% acceptance rate**) 2015
- The International Conference on User Modelling, Adaptation and Personalization (UMAP)
  Presented talk for accepted paper 2015
- The ACM/IEEE International Conference on Human-Robot Interaction (HRI)
  Presented talk for accepted paper 2015
- The AAAI Conference on Artificial Intelligence (AAAI)
  Presented robot demo 2014
- The Cognitive Science Society Annual Conference (CogSci)
  Presented robot demo 2014
- The IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)
  Presented talk for accepted paper and invited talk for the DevSor Workshop 2013
- The First Summer School on Social Human-Robot Interaction, UK 2013
- The Conference Towards Autonomous Robotic Systems (TAROS)
  Presented talk for accepted paper 2011

Work Experience

- **Student-teacher at Sidney Stringer School, Coventry, UK** 2009
  The Student Associates Scheme, UK

  Worked within the Mathematics Department as a student-teacher providing help for students during classes, raising students' aspirations for higher education. Produced and delivered presentations and a programming-based project and also delivered a lesson.

  Outcome: Developed important communication, presentation and leadership skills, effectively coordinated groups of students and worked together with teachers and other student-teachers in a motivating environment.

Skills

- Programming languages: C, C++, C#, Java, Matlab, Python, Android, HTML, PHP, CSS, LaTeX
- Software/IDEs: Git, Eclipse, Visual Studio, NetBeans, Xcode, VICON Motion Capture System
- Robotics platforms: Keepon, Nao, Baxter, ROS, YARP

Languages

- Romanian – native language
- English – fluent: written and spoken
- Spanish – conversational: spoken
- French – basic: written and spoken