

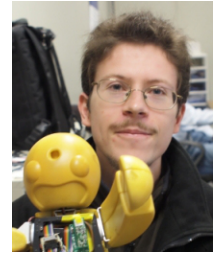
Martin Cooney

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Objective: To help realize some social robots capable of supporting people's well-being

Approach: Exploring how people's activities and intentions can be automatically recognized and how this knowledge leveraged to generate effective behaviors

RELEVANT WORK EXPERIENCE

| | | | |
|---------------|---------------------------|---|--|
| 2017 May–June | Visiting Researcher | Karde AS, Oslo (company co-located with Norwegian Computing Center, University of Oslo; http://www.karde.no/) | REMIND project: medicine reminders for dementia patients |
| 2014–current | Post-doc, then Researcher | Intelligent System Lab (IS-Lab), Halmstad U. | social healthcare robots in a smart home |
| 2008–2014 | Intern | Intelligent Robotics Lab (IRL), Osaka U.; and Intelligent Robots Center (IRC) and Hiroshi Ishiguro Lab (HIL), ATR (Advanced Telecommunications Research Institute International), Kyoto | social robots for well-being |

EDUCATION

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|------|--|---|
| 2017 | PhD student supervisor qualification | Halmstad U., Sweden |
| 2016 | Examiner qualification | “ |
| 2014 | Ph.D. Degree | Systems Innovation, Graduate School of Engineering Science, Osaka University, Japan |
| 2011 | Master's Degree | “ |
| 2003 | Bachelor of Computer Science (Highest Honors). Major: Software and Computing (Focus on Artificial Life/Int.) | Carleton University, Ottawa, Canada |
| 1998 | Ontario Secondary School Diploma | Lisgar Collegiate Institute, Ottawa, Canada |

AWARDS, SCHOLARSHIPS, QUALIFICATIONS

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|-----------|---|---|
| 2017 | 6 th place (\$2000US) for team HEARTalion (main supervisor), out of 38 teams from 10 countries submitting 200 different artworks | International Robot Art Competition 2017 https://robotart.org/ |
| 2015 | 1 st and 3 rd place awards, for demos of a smart home robot deployable in emergencies, and a self-fixing robot | Halmstad Workshop on Intelligent Environments Supporting Health and Well-being: Demo Competition |
| 2008–2014 | Monbukagakusho Scholarship (approx. 150,000yen per month) | Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT) |
| 2010 | NTF Award Finalist for Entertainment Robots and Systems | IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2010) |
| 2006/1999 | Japanese Language Exams: Kanji Kentei Language Exam, Level 2 and Japanese Language Proficiency Test, Level 1 | Japanese Ministry of Education and Japan Kanji Aptitude Testing Public Interest Foundation |
| 1998 | University Entrance Scholarship (\$8000CAN) | Carleton U. |
| “ | Ontario Scholar Award | Gov. of Ontario |
| “ | Academic Achievement Award | Lisgar Collegiate Institute |
| “ | High School German Language Test 1 st Place (\$100CAN Prize) | Goethe Institut |

OTHER

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|-----------------------------------|--|
| Languages | English (native); Japanese, German (fluent) |
| International experience | Canada, Japan, Sweden, Austria, Costa Rica, Russia, Norway |
| Citizenship | Canadian, born in Ottawa, Canada, May 1980 |
| Swedish civic registration number | 198005104693 |
| Married to | Erina Cooney |
| Other work experience | 2003–2004 freelance translator of Japanese and German 2004–2006 international exchange officer at Uozu city hall, Japan 2006–2008 writer |

ONLINE LINKS

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|----------------|---|
| Homepage | martin-cooney.com |
| YouTube | https://www.youtube.com/channel/UCVDPmL7NkC5Mn_A1wU0RPKg |
| Google Scholar | http://scholar.google.com/citations?user=62CzrzUAAAAJ&hl=ja&oi=ao |
| Researchgate | https://www.researchgate.net/profile/Martin_Cooney |
| Github | https://github.com/martincooney/ |
| Linkedin | https://www.linkedin.com/in/martin-cooney-188b2b54/ |
| Academia.u. | https://hh.academia.edu/MartinCooney |
| Orcid | orcid.org/0000-0002-4998-1685 |

WORK OVERVIEW

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| Research | (as of 2017-5-30) 7 journal, 7 conference; 76 citations, h-index 5, i10-index 2 Reviewer/Committee (ICRA, ICMI, Trans. Haptics, ICBFE, HAI, SCAI, Frontiers, etc) |
| Teaching | course responsible for Design of Embedded Intelligent Systems (DEIS) course (15 credits, DT8007, 28 students, core course for Master's 2nd year; work includes teaching, project support/building robots, and coordination for 8 lecturers) all credits required to be examiner in Sweden and a supervisor of PhD students |
| Supervision | 8 master, 5 bachelor; opponent for 2 master |
| Funding | current projects: CAISR/HiH, SIDUS AIR, REMIND Applied twice to KKS for a KK Prospekt (wrote ethics application in Swedish) |
| Development | manuals, code, integration (Baxter), loaning parts, demos |

MEDIA

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|-----------------------|-----------|------------------|---|--|
| 2017 (April 13) | Robot Art | Per Kågström | "Robot försökte måla Wahlbecks känslor" | Hallandsposten (newspaper) |
| 2017 (April 12) | " | - | "SVT Nyheter Halland - Ikväll 18.30" | SVT Play (5:11-7:14), Sveriges Television AB. https://www.svtplay.se/video/13274020/svt-nyheter-halland/svt-nyheter-halland-12-apr-18-30-1?cmpid=del:em:pl:20170412:ikvall-1830:pla |
| 2017- | " | Lotta Andersson, | Social robot in training to express | https://hh.se/english/news/news/soc |

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|-------------|---------------|------------------------------------|---|---|
| 04-27. | | Louise Wandel. | human feelings through art. | ialrobotintrainingtoexpresshumanfeelingssthroughart.65446423.html |
| 2017-05-18. | “ | Lotta Andersson. | Baxter impressed judges in Robot Art Competition. Baxters robotkonst imponerade på juryn. | http://hh.se/5.474db03315c1823d8b214577.html http://hh.se/omhogskolan/aktuellt/nyheter/nyheter/baxtersrobotkonstimpuneradepajurn.65446481.html (Swedish) |
| 2017-04-21. | “ | Lotta Andersson, Louise Wandel. | Robot försöker tolka mänskliga känslor i konst. | Samspel. http://samspel.hh.se/5.f5d848415b87be357df75f.html |
| 2016-1-13 | Robot Wedding | Ullami Nyhuus-Wiren. | Vigselceremoni med robotpräst. | Hallandsposten. |
| 2016-2-4 | “ | Malin Forsberg | Martin & Erina fick ett high tech-bröllop | Kvällsposten. |
| 2016-1-7 | “ | (add) | Roboten fixade vigseln | Kungsbacka Nytt. |

PUBLICATIONS

Journal Articles

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|----------------------|---|--|--|
| (Submitted May 2017) | Martin Cooney, Josef Bigun. | <i>PastVision+: Thermo-visual Inference of Unobserved Recent Events</i> | (Submitted: Frontiers in Robotics and AI Computational Intelligence: Intentions in HRI). |
| (Submitted Nov 2016) | Martin Cooney, Sepideh Pashami, Yuantao Fan, Anita Sant'Anna, Yinrong Ma, Tianyi Zhang, Yuwei Zhao, Wolfgang Hotze, Jeremy Heyne, Cristofer Englund, Achim J. Lilienthal, and Tom Ziemke. | <i>Exploring interactive capabilities for home robots via medium fidelity prototyping.</i> | (Submitted: ACM Transactions on Interactive Intelligent Systems (TiS)). |

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| 2017 | Martin Cooney, Anita Sant'Anna. | <i>Avoiding Playfulness Gone Wrong: Exploring Multi-objective Reaching Motion Generation in a Social Robot</i> | International Journal of Social Robotics. DOI 10.1007/s12369-017-0411-1 |
| 2014 | Martin Cooney, Shuichi Nishio, & Hiroshi Ishiguro | <i>Affectionate Interaction with a Small Humanoid Robot Capable of Recognizing Social Touch Behavior.</i> | ACM Transactions on Interactive Intelligent Systems (TiiS), Special Issue on Activity Recognition for Interaction, 4(4): 1-32. DOI: 10.1145/2685395 |
| 2014 | Martin Cooney, Shuichi Nishio, & Hiroshi Ishiguro | <i>Importance of Touch for Conveying Affection in a Multimodal Interaction with a Small Humanoid Robot.</i> | International Journal of Humanoid Robotics (IJHR) 12(1): 1550002 1-22. DOI: 10.1142/S0219843615500024. |
| 2014 | Martin Cooney, Shuichi Nishio, & Hiroshi Ishiguro | <i>Designing Robots for Well-being: Theoretical Background and Visual Scenes of Affectionate Play with a Small Humanoid Robot.</i> | Lovotics 1: 101. |
| 2014 | Martin Cooney, Takayuki Kanda, Aris Alissandrakis, & Hiroshi Ishiguro | <i>Designing Enjoyable Motion-Based Play Interactions with a Small Humanoid Robot.</i> | International Journal of Social Robotics 6(2): 173-193. doi:10.1007/s12369-013-0212-0 |

Conference Papers

| | | | |
|------|---|---|---|
| 2017 | Martin Cooney, Josef Bigun | <i>PastVision: Exploring "Seeing" into the Near Past with Thermal Touch Sensing and Object Detection--For Robot Monitoring of Medicine Intake by Dementia Patients.</i> | 30th Annual Workshop of the Swedish Artificial Intelligence Society (SAIS 2017). |
| 2015 | Martin Cooney & Stefan M. Karlsson | <i>Impressions of Size-Changing in a Companion Robot.</i> | 2nd International Conference on Physiological Computing Systems (PhyCS 2015). |
| 2015 | Jens Lundstrom, Wagner De Morais, Martin Cooney | <i>A holistic smart home demonstrator for anomaly detection and response</i> | 2015 IEEE International Conference on Pervasive Computing and Communication Workshops (PerCom Workshops). |

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|------|--|--|---|
| 2012 | Martin Cooney, Francesco Zanlungo, Shuichi Nishio, & Hiroshi Ishiguro | <i>Designing a Flying Humanoid Robot (FHR): Effects of Flight on Interactive Communication.</i> | 21st IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN 2012, pp. 364 – 371). doi:10.1109/ROMAN.2012.6343780 |
| 2012 | Martin Cooney, Shuichi Nishio, & Hiroshi Ishiguro. | <i>Recognizing Affection for a Touch-based Interaction with a Humanoid Robot</i> | IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2012, pp. 1420–1427). doi:10.1109/IROS.2012.6385956 |
| 2011 | Martin Cooney, Takayuki Kanda, Aris Alissandrakis, & Hiroshi Ishiguro | <i>Interaction Design for an Enjoyable Play Interaction with a Small Humanoid Robot</i> | 11th IEEE-RAS International Conference on Humanoid Robots (Humanoids 2011, pp 112–119). doi:10.1109/Humanoids.2011.6100847 |
| 2010 | Martin Cooney, Christian Becker-Asano, Takayuki Kanda, Aris Alissandrakis, & Hiroshi Ishiguro | <i>Full-body Gesture Recognition Using Inertial Sensors for Playful Interaction with Small Humanoid Robot.</i> | 2010 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2010, pp. 2276–2282). doi:10.1109/IROS.2010.5650081 (NTF Award Finalist for Entertainment Robots and Systems) |

Other Monographs, Books, Research reports

Martin Cooney. Recognizing Behavior and Strategy for Enjoyment and Affection in Touch-based Play with a Humanoid Robot. PhD Thesis, Osaka University, 2014.

Work featured on the cover page of both “(CAISR) Center for Applied Intelligent Systems Research, Annual Report 2014” and “Halftime Report 2012–2015”. http://islab.hh.se/mediawiki/CAISR_Annual_report_2014

Other Research Presentations, Invited Talks, and Demos (External)

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|---------------------------|-------------------|-------------------------------------|
| Planned Fall 2017 | (To be completed) | Örebro University |
| Planned 30/9/2017 | (To be completed) | ForskarFredag, at Halmstad Library. |
| Planned Summer 2017 | (To be completed) | Karde AS, and/or partners |

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| 19/5/2017 10:00–12:00 | “Conveying and recognizing intentions for social robots: some work done at Halmstad University for the Sidus AIR project” | Seminar at Cognition & Interaction Lab, Skövde University |
| 30/9/2016 | “Är robotar människans bästa vän?” (Are robots our best friend?) | ForskarFredag, at Halmstad Library. https://forskarfredag.se/halland/science-slam-presentation-av-foredragen/ |




Other Research Presentations, Invited Talks, and Demos (at HH)



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|------------------------|---|-----------------------------|---|
| 25/8/2017 (planned) | (No title yet) | presentation and robot demo | High school students visit |
| 24/4/2017 | “Importance of Electronics from the Perspective of Social Robots” | presentation and robot demo | Da Vinci Project/high school student visit |
| 31/3/2017 | “How to analyse, describe, plan and predict interactions between humans and complex systems?” | discussion topic leader | CAISR Industrial Advisory Board Workshop |
| 31/1/2017 | “Recent work at HH” | presentation and robot demo | Meeting of the new department |
| 3/11/2016 | “Introducing social robotics” | presentation and robot demo | Perspectives on Engineering course visit |
| 8/9/2016 | “Some robotics work at HH” | presentation and robot demo | Short presentation and robot demos for two groups of visitors from a local club |
| 25/4/2016 | “KK Prospekt with Phoniro: WellCam – Automatic Camera-based Detection of Person’s State of Well-being.” | presentation | Project quality assurance meeting |
| 21/3/2016 | “Aware robots in CAISR and Sidus AIR” | presentation | CAISR workshop |
| 3/3/2016 | “Social robots for well-being.” | presentation and robot demo | Open House |
| 26/1/2016 | “Sidus AIR progress” | presentation | Lab seminar |
| 28/10/2015 | “Impact of social robot research” | presentation and robot demo | Perspectives on Engineering course visit |
| 20/10/2015 | “Some progress on SIDUS AIR: regarding awareness of human perceptions of some communicative robot behavior” | presentation | Lab seminar |
| 9/11/2015 | “Young Researcher Introduction” | presentation | CAISR workshop |

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| 20/5/2015 | “CAISR Infrastructure: Halmstad Intelligent Home (HIH)” | presentation | CAISR workshop |
| 12/11/2014 | “Research: supporting well-being via intelligent systems” | presentation and robot demo | Perspectives on Engineering course visit |
| 9/6/2014 | “Supporting well-being via intelligent systems” | presentation | Lab seminar |

Tools Built/Made Available (robots and code)

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|------|-----------------|---------------|---|--|
| 2017 | Code | PastVision | <p>Python code and small dataset, e.t.a September 2017 for</p> <p>PastVision+: Thermo-visual Inference of Unobserved Recent Events (journal article submitted 2017)</p> | |
| 2015 | Code | Playful CHOMP | <p>C++ software code for computing playful trajectories based on Covariant Hamiltonian Optimization for Motion Planning. Described in publication: Martin Cooney, Anita Sant'Anna. Avoiding Playfulness Gone Wrong: Exploring Multi-objective Reaching Motion Generation in a Social Robot (Accepted 2017: International Journal of Social Robotics).</p> <p>Available at github: https://github.com/martincooney/trychomp</p> | |
| 2015 | Robot Prototype | Kakapo | <p>Mark I was a first prototype to use cooling/heating and e-paper in interaction, to explore likable personalities:</p> <p>Martin Cooney, Shuichi Nishio, & Hiroshi Ishiguro (2014) Affectionate Interaction with a Small Humanoid Robot Capable of Recognizing Social Touch Behavior. ACM Transactions on Interactive Intelligent Systems (TiS), Special Issue on Activity Recognition for Interaction, 4(4): 1-32. DOI: 10.1145/2685395</p> | |

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| | | | <p>Mark II was used to investigate playful motion generation in:</p> <p>Martin Cooney, Anita Sant'Anna. Avoiding Playfulness Gone Wrong: Exploring Multi-objective Reaching Motion Generation in a Social Robot. International Journal of Social Robotics.</p> | |
| | Robot Prototype | Penumbra | <p>Used to investigate how people seek to interact based on some typical motivations in:</p> <p>Martin Cooney, Shuichi Nishio, & Hiroshi Ishiguro (2014) Importance of Touch for Conveying Affection in a Multimodal Interaction with a Small Humanoid Robot. International Journal of Humanoid Robotics (IJHR) 12(1): 1550002 1-22. DOI: 10.1142/S0219843615500024.</p> |  |
| | Robot Prototype | Angel | <p>First flying humanoid robot prototype.</p> <p>Mark I used wings and Mark II propellers to move Mark I was described in:</p> <p>Martin Cooney, Francesco Zanlungo, Shuichi Nishio, & Hiroshi Ishiguro (2012) Designing a Flying Humanoid Robot (FHR): Effects of Flight on Interactive Communication. In Proceedings of the 21st IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN 2012, pp. 364 - 371). doi:10.1109/ROMAN.2012.6343780</p> |  |
| | Robot Prototype | Teru | <p>Used to explore expression of emotions via touch; 26 sensors on a small mockup</p> |  |
| | Robot Prototype | Suica | <p>First size-changing humanoid prototype.</p> <p>Used to explore how size changes are perceived in:</p> <p>Martin Cooney & Stefan M. Karlsson (2015) Impressions of Size-Changing in a Companion</p> | |

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|------|-----------------|-----------|---|---|
| | | | Robot. In Proceeding of the 2nd International Conference on Physiological Computing Systems (PhyCS 2015). |  |
| 2008 | Robot Prototype | Ticklebot | Used for exploring laughter, tickling, and playful interactions with an infant-like robot |  |

Funding

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|------------------------|---------------------------|--|---|
| 2017–current | REMIND (EU) | Medicine reminder systems for dementia patients | main applicant: Chris Nugent |
| 2014–current | CAISR | Aware intelligent systems | main applicant: Thorsteinn Rögnvaldsson |
| 2014–current | SIDUS AIR | Recognizing activities and intentions and generating robot behaviors | main applicant: Tom Ziemke |
| 2014–current | Halmstad Intelligent Home | Responding to emergencies in sensorized environment | main applicant: Antanas Verikas |
| (Submitted 2016, 2017) | WellCam | Monitoring well-being via camera | main applicant: Martin |
| 2013 | CLIC | Leadership training | main applicant: Martin |

Other:

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| Pedagogical evaluation available for 2016: e.g., “The good things– helpful professors, the course was helpful to explore different aspects of technology.”, “The course was very interesting, and the lectures and labs were very relevant for the project.” |
| Volunteer Groups/Assignments: health tech group, intelligent environment group, work space brainstorming group |
| Management training: Leadership training was received in Japan as part of the CLIC project. |
| Experience teaching language/cultural classes for children and adults in Japan (2004–2006). |