Robotics and Military Applications:
from Current Research and Deployments to Legal and Ethical Questions

Format and organizers

- One-day workshop (8 or 9 talks x 30 min + panel discussion and question/answer with audience)

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Topics

- Current deployments of military robots and implications (effectiveness, casualties, consequences on civilian populations,...)

- Legal and ethical issues of military robots

- Current and future research topics in robotics connected with military applications

- Funding of scientific research by military agencies

Motivations and objectives

Military robots are no more restricted to science-fiction novels or to a distant future but have become a concrete reality. Autonomous aerial robots -- or drones -- are for instance currently deployed, mainly by the US Army, in several countries such as Afghanistan, Pakistan, Yemen, or Somalia. According to independent investigations[1], such robots have caused several thousands of casualties, including a non-negligible number of civilians. As a result, military applications of robotics are focusing a large attention from the civil society, prompting field researches on the consequences of drone strikes[2], as well as legal and ethical debates about this new military technology[3]. The case is considered so serious that the UN has recently decided to set up dedicated investigations into US drone strikes[4].

At the same time, within the academic robotics research community, there are a considerable number of programs that are motivated by military applications and/or funded by military agencies. Many of the advances obtained in such programs have been or will be used in building operational military robots. It is thus evident that *robotics researchers*, who stand at the very beginning of the chain that eventually leads to operational military robots, *must take an important part in the societal debate* mentioned above. Very recently, our colleagues in the AI community have devoted a plenary session to the issue of autonomous weapons at their main biannual conference IJCAI 2013[5].

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1 See for instance http://www.thebureauinvestigates.com/category/projects/drones/
2 *Living Under Drones: Death, Injury, and Trauma to Civilians From US Drone Practices in Pakistan*, International Human Rights and Conflict Resolution Clinic at Stanford Law School and Global Justice Clinic at NYU School of Law, http://livingunderdrones.org
3 *Losing Humanity, the Case against Killer Robots*, Human Rights Watch, http://www.hrw.org/reports/2012/11/19/losing-humanity
4 http://www.guardian.co.uk/world/2012/oct/25/un-inquiry-us-drone-strikes
5 See http://ijcai13.org/program/day/7

The goal of this workshop is to stimulate the debate on military applications within the robotics community. To this end, prominent speakers from academia, NGOs, and governmental agencies will present facts and data about the current research and deployments of military robots (technologies, motivations, casualties, economic and psychological consequences on the concerned populations,...), as well as elements of legal and ethical reflections about military robots.

In contrast with existing efforts (such as the interesting workshops previously organized by the Roboethics interest group[6]), the focus here is exclusively on military robots and the burning issues raised by their ongoing deployments. We hope that this workshop will help stimulating the reflections of robotics researchers as individuals but also as a community about the issue of military robots, so that they can also contribute in return to this important societal debate.

Intended audience

This workshop is open to anyone (students, researchers, general public,...) interested in the implications of research in society and more specifically in the use of robotics technology for military applications. As the speakers come from a wide range of opinions and backgrounds (academia, NGOs, government agencies), the workshop will have a strong didactic role and will aim at fostering a *fair and constructive* discussion. We hope to attract in particular students and young researchers and, for this, in addition to advertising the workshop through the usual channels, we will also use channels dedicated to graduate students and postdocs, such as the graduate student mailing lists, the RAS Student Activities Committee, etc.

Tentative program

Morning : Legal and ethical issues posed by fully autonomous weapons

• Possible topic: « AI and fully autonomous weapons » Noel Sharkey (http://staffwww.dcs.shef.ac.uk/people/N.Sharkey), Professor of Artificial Intelligence and Robotics, Professor of Public Engagement, University of Sheffield, Co-founder and Chairman of the International Committee for Robot Arms Control (http://icrac.net/) [confirmed]

• Possible topic: « The case against killer robots » A representative of Human Rights Watch involved in writing the report *Losing Humanity* (http://www.hrw.org/reports/2012/11/19/losing-humanity)

• A representative of the US Department of Defense involved in writing the DoD Directive 3000.09 (http://www.dtic.mil/whs/directives/corres/pdf/300009p.pdf)

• Two robotics researchers/professors from academia (representing contrasting opinions)

• Panel discussion and question/answer with audience

Afternoon : Military robotics and robotics researchers

• Possible topic: « Legal issues associated with US drone strikes » James Cavallaro (http://www.law.stanford.edu/profile/james-cavallaro), Professor of Law and Director of Stanford International Human Rights and Conflict Resolution Clinic (IHRCRC, cf. the report *Living Under Drones* http://livingunderdrones.org) [previously confirmed]

• Possible topic: « Ethics of autonomous robots » George Bekey (http://www-robotics.usc.edu/~bekey), Professor Emeritus of Computer Science, Electrical Engineering and Biomedical Engineering, University of Southern California [confirmed]

• Possible topic: « Fundings of robotics research by military agencies » Gill Pratt (http://www.darpa.mil/Our_Work/DSO/Personnel/Dr_Gill_Pratt.aspx), Program Manager, Defense Sciences Office, DARPA (http://www.darpa.mil/) [previously confirmed]

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6   http://www.roboethics.org/