



**STOCKHOLM INTERNATIONAL  
PEACE RESEARCH INSTITUTE**

## Autonomous Technologies and their Societal Impact

*Full day Workshop convened by SIPRI and the IEEE FDC*

*Friday 2 September, 09.00 – 17.00*

*Venue: Stockholm International Peace Research Institute (SIPRI), Stockholm*

*Visiting Address: Signalistgatan 9, 169 70 Solna, Sweden*

### Biographies

#### **Barbara Bottalico**



Barbara Bottalico is a Postdoctoral Fellow at the European Center for Law, Science and New Technologies, University of Pavia, Italy, and a qualified lawyer in Milan. Her current research is focused on Law and Robotics, especially in the field of health technologies, telemedicine and robots in the industry. For the academic year 2016–2017 she is also a Lecturer at the Faculty of Medicine, University of Pavia, for the course Bioethics. Since 2010 she has been part of the scientific committee of the EANL Law, Cognitive Neuroscience & New Technologies Summer School 2016 (former: EANL Law and Neuroscience Winter School), which takes place annually at the University of Pavia, with participants from across Europe and the United States. In 2015–2016 she served as an expert for the draft of the report on Regulation in Robotics, presented to the European Commission by the Robotics Coordination Action for Europe (RockEU).

#### **Vincent Boulanin**



Dr Vincent Boulanin is a Researcher at SIPRI. He joined SIPRI in 2014, where he works on issues related to the production, use and control of emerging military and security technologies, notably cyber-security technologies and autonomous weapon systems. He received his PhD in Political Science from École des Hautes en Sciences Sociales in Paris in October 2014. His dissertation looked at the diversification of the European arms industry into the security realm. His other research interests include the impact of military and security technologies on the practice of security professionals and the social construction of threats and risks.

#### **Merel Ekelhof**

Merel Ekelhof currently works as a PhD researcher at the Vrije Universiteit Amsterdam. Her research focuses on the development and use of autonomous



weapon systems, with a particular focus on human control within relevant decision-making processes. Her research is financed by the Netherlands Ministries of Defence and Foreign Affairs, and is also affiliated with TNO (Netherlands Organization for Applied Scientific Research). Prior to her PhD position, Merel worked with the Royal Netherlands Air Force and Pax. She holds an LL.M in Law and Politics of International Security from the VU Amsterdam.

### **Elena Finchk**

Elena Finchk is currently an Assistant Researcher at the United Nations Institute for Disarmament Research (UNIDIR) where she focuses on the weaponization of increasingly autonomous technologies and on cyber security. In 2015 and 2016 she was a consultant for the German Ministry of Foreign Affairs during its chairmanship for discussions about lethal autonomous weapon systems at the United Nations in Geneva. She previously worked on small arms and nuclear weapons at the UN Regional Center for Peace and Disarmament in Togo and at an NGO in Berlin. She holds a Master's degree in International Law and a B.A. in International Politics.

### **Raj Madhavan**



Raj Madhavan is the Founder & CEO of Humanitarian Robotics Technologies, LLC and a Distinguished Visiting Professor of Robotics at Amrita University, Kerala, India. He has held appointments with the Oak Ridge National Laboratory (March 2001-January 2010) as an R&D staff member based at the National Institute of Standards and Technology (March 2002-June 2013), and as an assistant and associate research scientist, and as a member of the Maryland Robotics Center with the University of Maryland, College Park (February 2010-December 2015). He received a Ph.D. in Field Robotics from the University of Sydney and an ME (Research) in Systems Engineering from the Australian National University. Over the last 20 years, he has contributed to topics in field robotics, and systems and control theory. His current research interests lie in humanitarian robotics and automation – the application and tailoring of existing and emerging robotics and automation technologies from a variety of domains, including unmanned (aerial, ground) vehicles. He is particularly interested in the development of technologies and systems that are cost effective, reliable, efficient and geared towards improving the quality of lives of people in under-served and underdeveloped communities around the globe. He has authored over 185 papers in archival journals, conferences, and magazines including three books and four journal special issues. He is active within IEEE and the IEEE Robotics and Automation Society leading several committees and activities. He is the 2016 recipient of the IEEE RAS Distinguished Service Award for his “distinguished service and contributions to RAS industrial and humanitarian activities”. See <http://ammachilabs.org/faculty/raj/> for more details.

### **Ludovic Righetti**



Ludovic Righetti has led the Movement Generation and Control group at the Max-Planck Institute for Intelligent Systems (Germany) since September 2012. He was a Postdoctoral Fellow at the University of Southern California between 2009 and 2012. He studied at the Ecole Polytechnique Fédérale de Lausanne (Switzerland) where he received an engineering diploma in Computer Science (2004) and a Doctorate in Science (2008). He has received several awards for his research, including the 2010 Georges Giralt PhD Award, the 2011 IROS Best Paper Award, the 2016 IEEE Robotics and Automation Society Early Career Award and the 2016 Heinz Maier-Leibnitz Prize from the German Research Foundation. His research focuses on the planning and control of movements for autonomous robots, with a special emphasis on legged locomotion and manipulation. He is also interested in societal implications of robotics. He has organised a workshop at the International Conference on Robotics and Automation 2014 on the implications of robotics on military applications and has served as a civilian expert for several expert meetings on lethal autonomous weapons organised by the International Committee of the Red Cross.

### **Patrik Stensson**



Major Patrik Stensson, PhD, joined the Swedish Air Force in 1988, becoming a fighter pilot flying the Viggen until it retired from service in 2004. In 1998 he acquired an MSc in Engineering Physics, specializing in computer systems, and began working with military research and development, focusing on human–systems integration. In 2014 he acquired a PhD in Human–Computer Interaction at Uppsala University. His interdisciplinary research concerns the usefulness of advanced technological systems and focuses on the human role in achieving desired effects in real world situations. Major Stensson’s current assignment is at the Swedish Air Warfare Development Department.

### **Gurvinder S. Virk**



Gurvinder S. Virk (BSc, PhD, DIC, FIET, FCIBSE, CEng, CMath, FIMA, MIEEE) is Professor of Robotics at the University of Gävle and KTH Royal Institute of Technology. He is also a Trustee of the UK-registered charity CLAWAR, aimed at advancing robotics for public benefit. Prior to moving to Sweden in March 2011, he was at Massey University, Wellington, New Zealand and before that at the University of Leeds, UK. He is a technical expert in control theory and its applications with particular experience in service robotics and the use of advanced model-based control for a variety of applications. He has produced over 350 papers and 11 books in these areas. His current interests are in physical assistant exoskeletons for elderly persons (medical and non-medical applications). He has extensive experience of project management, leading international R&D and standardization projects, and he has held several grants from national and European sources (total value of over €20m), as well as

industry. Professor Virk is a Convenor of three international robot standardization work groups, who are developing the important standards for newly emerging robots. He is also Coordinator of the euRobotics Topic Group on Robot Standardization, which is providing the inputs for robot standardization-related issues into the EC Horizon 2020 Programme. He is a Fellow of the Institution of Engineering and Technology (FIET), a Fellow of the Chartered Institution of Building Services Engineers (FCIBSE) and a Fellow of the Institute of Mathematics and its Applications (FIMA). He is also a Chartered Engineer and a Chartered Mathematician. He has been awarded the Freedom of the City of London for his work in promoting information technology and is a Freeman of the Worshipful Company of Information Technology.

### **Camilla Waszink**



Camilla Waszink is Programme Director for Arms and Disarmament at the International Law and Policy Institute (ILPI) in Oslo. She has 15 years of experience in the areas of humanitarian affairs, security, peace and conflict. She has previously held positions as a project manager in the Norwegian Red Cross, senior advisor with the Norwegian Peacebuilding Resource Centre and policy adviser in the Arms Unit of the International Committee of the Red Cross, where she worked on a range of weapons and international humanitarian law issues. She has also worked as a researcher and consultant, including for the Small Arms Survey, the Centre for Humanitarian Dialogue and the Bonn International Center for Conversion. Waszink has published extensively on arms control and international humanitarian law, protection of civilians, post-conflict disarmament and weapons management in peace processes.

### **Alan Winfield**



In 1984, shortly after completing a PhD in Digital Communications, Alan resigned his lectureship at the University of Hull, to co-found APD—a company committed to the commercialization of patented research in high-performance computer architectures and the delivery of contract research and development for safety-critical communication systems. He remains a non-executive director, but left APD in 1992 to become Associate Dean and Professor of Electronic Engineering at the University of the West of England. He is a Chartered Engineer and a renowned specialist in robotics, artificial intelligence and intelligent autonomous systems.