

# Martin Gerdzhev

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## Education

2013 – today	<b>Ph.D. Computer Science</b> McGill University, Montreal, Canada Supervisor: Joelle Pineau
2008 – 2011	<b>M.A.Sc. Electrical and Computer Engineering</b> Ryerson University, Toronto, Canada <b>Thesis: An Enhanced System for Augmenting Urban Search and Rescue Canines</b> Supervisor: Alexander Ferworn
2005 – 2008	<b>B.Sc. Computer Science with Honours</b> Ryerson University, Toronto, Canada
2004 – 2005	<b>B.S. Computer Science</b> Illinois Institute of Technology, Chicago, USA

## Professional Recognition & Awards

2013	<b>Natural Sciences and Engineering Counsel (NSERC) Post Graduate Scholarship PGS D</b> (\$105,000)
2011	<b>Governor General Gold Medal Nomination</b> (presented to the graduate student who achieves the highest academic standing in a graduate degree program)
2009	<b>Ontario Graduate Scholarship (OGS)</b> (\$15,000, presented to graduate students in the province of Ontario for academic merit)
2008	<b>Ryerson Graduate Award (RGA)</b> (\$3,000, presented by individual departments for academic merit)
2007 – 2008	<b>NSERC Undergraduate Student Research Award</b> (\$4,500 plus organizational contribution, presented for high academic performance and commitment to research)
2006 – 2007	<b>Ryerson University, University In-program Scholarship</b> (\$2,000, presented for students in Computer Science with CGPA of 3.50 or higher)
2004 – 2008	<b>Dean's List Recognition</b>

## Research Interests

- Robotics, Response Robotics
- Autonomous Systems and Vehicles
- Machine Learning

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- Human Computer Interaction
  - Accessibility

## Research Experience

- 2006 – 2015 | **Research Assistant/Software Developer**, Inclusive Media Design Centre, Ryerson University, Toronto
- Team leader and main developer for the Terptube project – a Symphony based web application, that aims to create an accessible online environment that supports mentoring between Deaf users and sign language interpreters. (<https://imdc.ca/ourprojects/terptube>)
  - Team leader and main developer for the Signlink Studio project – a Java and Flash based web authoring application that enables marginalized deaf communities who use non-text methods of communication, such as sign language, to enjoy a strong on-line presence of their culture and identity in their own language. (<http://signlinkstudio.ca>)
  - Created a webcam recording application using ActionScript and the Red 5 media server.
  - Performed usability testing on the above projects.
  - System Administrator of a Red Hat Enterprise Linux server supporting several domains.
- 2010 | **Researcher**, The Pressure Pipe Inspection Company, Toronto
- Worked on a system that transmits sensory signals across extreme distances (2KM) for pressure pipe inspection.
  - The solutions implemented had to fit within very constrained space and strict durability specifications.
  - Worked with a team to develop a method to easily switch from sonar to visual inspection without the need to extract and change the sensor head.
- 2008 | **Research Assistant**, N-CART Lab, Ryerson University, Toronto
- Designed Printed Circuit Boards (PCB).
  - Researched and investigated various wireless technologies in order to develop a working Canine Remote Deployment System (CRDS) - a dog-mounted remote delivery system for victims trapped in rubble, when human contact is precluded, but access by disaster dogs is possible.
  - Developed a Wi-Fi version of the CRDS.
  - Worked with a team of researchers to develop an automatic release version of CRDS.

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## Teaching Experience

- 2017 – now **Cegep Instructor**, Computer Science Department, Dawson College, Montreal  
Courses taught:
- Software Development I – 420-214-DW
  - Operating Systems I – 420-241-DW
  - Web Site Creation – 420-BXC-03
- 2016 – now **Graduate Teaching Assistant**, Computer Science Department, McGill University, Montreal  
Courses taught:
- Intro to Robots & Intelligent Systems – COMP 417
  - Foundations of Programming – COMP 202
  - Introduction to C++ – COMP 322
- 2011 – 2013 **University Instructor**, Chang School of Continuing Education, Ryerson University, Toronto  
Courses taught:
- Network Administration for Linux – CXIT 630
  - Developing Advanced Web Applications Using Java – CXEC322
  - Android Application Development – CXEC 328
  - Flash Advanced – CXCP679
- 2010 – 2013 **College Instructor**, Faculty of Applied Science and Technology, Sheridan College, Brampton and Oakville  
Courses taught:
- Object Oriented Programming 1 – PROG10082
  - Object Oriented Programming 2 – PROG24178
  - Linux-UNIX-Operating Systems – SYST13416
  - Linux System Administration – SYST28296
  - Applied Operating Systems Design – SYST20261
  - iPhone Application Development – PROG31632
  - Web Technologies – SYST28043
  - Internet Site Development Java – PROG28263
  - Web Development 1 – SYST10049
  - Web Development 2 – SYST10199
- 2008 – 2010 **Graduate Teaching Assistant**, Computer Science Department, Ryerson University, Toronto  
Courses taught:
- Computer Science I - CPS 109
  - Computer Science II - CPS 209
  - Unix/C - CPS 393
  - Autonomous Mobile Robotics - CPS 607

## Software and Hardware Skills

**Programming Languages:** Java, C, C++, Python, Objective-C, Smalltalk, Ruby, ML, Pascal, Prolog, Shell Scripting, Assembly, SQL, UML

**Web Technologies:** HTML, CSS, Javascript, XML, JSON, Flash ActionScript, CGI/Perl, PHP, ASP.NET, JSP, Servlets, Javabeans

**Frameworks:** JSF, Java Struts, Symphony, jQuery, jQuery UI, Bootstrap

**Webservers:** Apache, IIS, Tomcat, Red 5

**IDEs:** Eclipse, NetBeans, MS Visual Studio, XCode, Squeak, IBM Smalltalk, Dreamweaver, Adobe Flash, Flex, Vim

**Version Control Systems:** Git, Subversion

**Software Tools:** Adobe Photoshop, MS Office, Eagle, L<sup>A</sup>T<sub>E</sub>X

**Operating Systems:** ROS, Linux, Unix, Windows, OS X, Android, iOS

**Hardware:** PC Assembling, PCB design, Soldering

## Membership in Professional Organizations

- Institute of Electrical and Electronic Engineers (IEEE).
- Association for the Advancement of Artificial Intelligence (AAAI).

## Publications

CONFERENCE PROCEEDINGS

- [1] D. I. Fels, M. Gerdzhev, E. Hibbard, A. Goodrum, J. Richards, J. Hardman, and N. Thompson, "Sign language online with signlink studio 2.0," in *Universal Access in Human-Computer Interaction. Applications and Services*, pp. 492–501, Springer Berlin Heidelberg, 2009.
- [2] J. Tran, M. Gerdzhev, and A. Ferworn, "Continuing progress in augmenting urban search and rescue dogs," in *Proceedings of the 6th International Wireless Communications and Mobile Computing Conference*, pp. 784–788, ACM, 2010.
- [3] J. Tran, A. Ferworn, M. Gerdzhev, and D. Ostrom, "Canine assisted robot deployment for urban search and rescue," in *Safety Security and Rescue Robotics (SSRR), 2010 IEEE International Workshop on*, pp. 1–6, IEEE, 2010.
- [4] M. Gerdzhev, J. Tran, A. Ferworn, and D. Ostrom, "Dex-a design for canine-delivered marsupial robot," in *Safety Security and Rescue Robotics (SSRR), 2010 IEEE International Workshop on*, pp. 1–6, IEEE, 2010.
- [5] M. Gerdzhev, J. Tran, A. Ferworn, K. Barnum, and M. Dolderman, "A scrubbing technique for the automatic detection of victims in urban search and rescue video," in *Proceedings of the 6th International Wireless Communications and Mobile Computing Conference*, pp. 779–783, ACM, 2010.
- [6] M. Bashardoust, M. Gerdzhev, and A. Abhari, "Peer-to-peer simulation for improving the system of serving multimedia on the web," in *Proceedings of the 2009 Spring Simulation Multiconference*, p. 125, Society for Computer Simulation International, 2009.
- [7] D. I. Fels, M. Gerdzhev, J. Ho, and E. Hibbard, "Usability and use of sls: caption," in *Proceedings of the 12th international ACM SIGACCESS conference on Computers and accessibility*, pp. 291–292, ACM, 2010.

- [8] D. I. Fels, D. Roush, P. Church, M. Gerdzhev, T. Stevens, and E. Hibbard, “Terptube: A signed language mentoring management system,” in *Computers Helping People with Special Needs*, pp. 408–414, Springer International Publishing, 2014.
- [9] M. Gerdzhev, J. Pineau, I. M. Mitchell, P. Viswanathan, and G. Foley, “On the use of modular software and hardware for designing wheelchair robots,” in *2016 AAAI Spring Symposium Series*, 2016.

## THESIS

- [1] M. Gerdzhev, “An enhanced system for augmenting urban search and rescue canines,” 2011.