Curriculum Vitae — Komminist Sisai Weldemariam, PhD

Contact Information

School of Computing, Queen's University
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Research Interests

Software Engineering, Security, Methods and Tools for Reliable and Secure Software, Electronic Voting, Computing for Development.

Education

Doctor of Philosophy		Nov 2006 — Mar 2010
Computer Science & Information Engineering		
University of Trento		Trento, Italy.
Master's of Science		Jul 2004 — Jul 2006
Computer Science and Engineering		
Indian Institute of Technology		Bombay, India.
Bachelor of Science		Sep 1999 — Jul 2003
Computer Science		
Addis Ababa University		Addis Ababa, Ethiopia.

Work Experience

Postdoctoral Researcher		Aug 2012 — Present
Queen's University		Kingston, ON Canada.
Tenure-track Researcher		Jun 2011 — Aug 2012
Fondaztione Bruno Kessler		Trento, Italy.
Postdoctoral Researcher		Apr 2010 — May 2011
Fondaztione Bruno Kessler		Trento, Italy.
Teaching Collaborator		Sep 2010 — Jan 2012
University of Trento		Trento, Italy.
Research Collaborator		Oct 2009 — Mar 2010
University of Trento		Trento, Italy.
Research Assistant		Nov 2006 — Oct 2009
Fondaztione Bruno Kessler		Trento, Italy.
Visiting Researcher		May 2008 — Mar 2009
University of California		Santa Barbara, CA USA.

Lecturer   Jul 2003 — July 2004

Arbaminch University   Arbaminch, Ethiopia.

PROFESSIONAL   Program Committee Co-chair
SERVICE
- The 8th IEEE International Workshop on Security, Trust and Privacy for Software Applications (STPSA 2013)
- The 2nd IEEE International Workshop on Requirements Engineering for Electronic Voting Systems (REVOTE 2011)

Program Committee Member (Selected)
- IEEE ISSRE Fast Abstract (2012), AFRICOMM (2009 – 2012), ICDS (2011–2013), DEPEND (2011 – 2013), REVOTE (2012), etc.

Journal Reviewer
- IEEE Transactions on Information Forensics and Security
- Information and Software Technology (INFSOF, Elsevier)
- Journal of Systems and Software (JSS, Elsevier)
- Security and Communication Networks (Wiley)

Event Organizer
- *Maputo Summer School of ICTs*, a learn-by-doing training to university level students by exposing them to real-world software development practices with a particular focus on computing in developing regions (2011 - 2012).
- *Rhok Trento* (Random Hacks of Kindness), a global community of innovators building practical open technology to make the world a better place (2011).

SUPERVISION /
CO-SUPERVISION
- Ali Fawzi Najm Al-Shammari (**PhD**), *Open Standard for Vote Verification.*
- Amanuel Zewge (**PhD**), *Requirements Engineering techniques for Agricultural Information System in Developing Countries.*
- Henok Sahilu (**PhD**), *Computing for Development: Mobile Personalization techniques for Improving Quality of Life.*
- Rashedul Hasan (**MSc**), *Security Assessment of Vaccination Reminder System for Bangladesh using CORAS Methodology.*
- Claudio Frigo (**BSc**), *Misconfiguration Vulnerability Analysis in Web Applications.*

INVITED
TALKS
- CGI Canada, November 2012.
- Adama Science and Technology University (Ethiopia), April 2012.
- Free University of Bolzano (Italy), April 2011.
- University of Göttingen (Germany), December 2010.
- Addis Ababa University (Ethiopia), April 2010.
- Politecnico di Milano (Italy), March 2010.
- University of Surrey (UK), December 2008.

TEACHING
(UNIVERSITY)
- CISC 848: Software Reliability and Security (graduate), Fall 2012, Queen's University, Canada.
- Case Studies for Master in Technologies (graduate), Autumn/Winter 2011/12, University of Trento, Italy.

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- Case Studies for Master in Technologies (graduate), Autumn/Winter 2010/11, University of Trento, Italy.
- COMP 201: Introduction to Programming Langauges (undergraduate), 2004, Arbaminch University, Ethiopia.
- COMP 272: Data Structure and Algorithm Design (undergraduate), 2004, Arbaminch University, Ethiopia.
- COMP 241: Database Systems (undergraduate), 2004, Arbaminch University, Ethiopia.
- EE 211: Digital Electronics (undergraduate), 2004, Arbaminch University, Ethiopia.
- Computer Applications (certificate), 2003, private collage, Ethiopia.

TEACHING (SUMMER SCHOOL)

- Organizer and teacher of the Maputo 2012 Summer School of ICTs to students participated from seven universities (2nd Edition).
- Organizer and teacher of the Maputo 2011 Summer School of ICTs to students participated from seven universities (1st Edition).

PROJECTS

- **Bring The Food**, a mobile/web application to fight food waste by connecting donors and charities.
- **Maputo Living Lab**, using ICT to stimulate development in Mozambican districts and to create new business opportunities for the local community, joint-ventures and bring competences and international investments to the area.

GRANT APPLICATION EXPERIENCES

- At **Queen's**: I've involved in the preparation of two industrial-level grant applications (from inception of the proposal to the final submission).
- At **Fondazione Bruno Kessler**: I've participated in two EU (FP7) proposal preparations and other grant applications (by developing Work Packages).

HONORS AND AWARDS

- Best Paper Award for the paper "*Context Information Refinement for Pervasive Medical Systems.*" presented at ICDS'10
- Best Paper Award for the paper "*Modeling and Analysis of Laws using BPR and Goal-oriented framework*" presented at CYBERLAW'10.
- Travel Grant, USENIX Security'10, Washington, DC, USA, 2010
- Travel Grant, USENIX Security'09, Montreal, CA, 2009
- Travel Grant, USENIX Security'08, San Jose, CA, USA, 2008
- ACM Travel Grant, Doctoral Symposium & ISSTA'08, Seattle WA, USA, 2009
- PhD Graduate Scholarship, Fondazione Bruno Kessler, 2006 - 2009
- Master of Technology scholarship grant, Ministry of Education, Addis Ababa Ethiopia, 2004 - 2006

PROFESSIONAL MEMBERSHIP

IEEE, ACM

EDITED VOLUMES

1. Ruediger Grimm, Steve Schneider, Melanie Volkamer, **Komminist Weldemariam**. 2011 International Workshop on Requirements Engineering for Electronic Voting Systems, REVOTE 2011, Trento, Italy, August 29, 2011. IEEE 2011, ISBN 978-1-4577-0951-7.

JOURNALS AND BOOK
CHAPTERS

2. **Komminist Weldemariam** and Adolfo Villafiorita. Procedural Security Analysis: A Methodological Approach. *Journal of Systems and Software (JSS)*, 2011.

3. **Komminist Weldemariam**, Richard A. Kemmerer and Adolfo Villafiorita. Formal Specification and Verification of an e-voting System: An experience report. *Journal of Systems and Software (JSS)*, 2011.

4. Adolfo Villafiorita, **Komminist Weldemariam**, Roberto Tiella. Development, Formal Verification and Evaluation of an e-voting System with VVPAT. *IEEE Transaction on Information Forensics and Security*, 2009.

5. **Komminist Weldemariam**, Adolfo Villafiorita. Analyzing the Security of Electronic Voting Systems: Can Formal Methods Really Help?. *Strategic and Practical Approaches for Information Security Governance: Technologies and Applied Solutions*, 2012. DOI: 10.4018/978-1-4666-0978-5.ch018.

6. Luca Cernuzzi, Magalí Gonzáez, Marco Ronchetti, Adolfo Villafiorita, **Komminist Weldemariam**. Experiences in e-Governance from an ICT4G Perspective: Case Studies and Lesson Learned. *Global Strategy and Practice of e-Governance: Examples from Around the World*, 2011. DOI:10.4018/978-1-60960-489-9.ch023.

7. **Komminist Weldemariam**, Alberto Siena, Adolfo Villafiorita, Angelo Susi. Enhancing Law Modeling and Analysis: using BPR-Based and Goal-Oriented Frameworks. *The International Journal on Advances in Security.*, vol. 3, no. 3 & 4, 2010.

REFEREED
PROCEEDINGS

8. Umme Hunny, Mohammad Zulkernine, **Komminist Weldemariam**. OSDC: Adapting ODC for Developing More Secure Software. *Accepted in Proceedings of the 28th ACM Symposium On Applied Computing - Software Engineering Track* (ACM SAC 2013).

9. Dhyanesh Chaudhari, Mohammad Zulkernine, **Komminist Weldemariam**. Towards a Ranking Framework for Software Components. *Accepted in Proceedings of the 28th ACM Symposium On Applied Computing - Dependable and Adaptive Distributed Systems Track* (ACM SAC 2013).

10. Birhanu Eshete, **Komminist Weldemariam**, Adolfo Villafiorita. BINSPECT: Holistic Analysis and Detection of Malicious Web Pages. *In Proceedings of the International Conference on Security and Privacy in Communication Networks* (SecureComm 2012).

11. Ali Fawzi Najm Al-Shammari, **Komminist Weldemariam**, Adolfo Villafiorita. Understanding the Development Trends of Electronic Voting Systems. *In Proceedings of the Seventh IEEE International Conference on Availability, Reliability and Security* (ARES 2012).

12. Ali Fawzi Najm Al-Shammari, **Komminist Weldemariam**, Adolfo Villafiorita. Towards an Open Standard Vote Verification Framework in Electronic Voting Systems. *In Proceedings of the Seventh IEEE International Conference on Availability, Reliability and Security.*

13. Amanuel Zewge, **Komminist Weldemariam**, Sebsibe Hailemariam, Mesfin Belachew, Adolfo Villafiorita, Angelo Susi. On the use of Goal-Oriented

Methodology for Designing Agriculture Services in Developing Countries *In Proceedings of the ACM International Conference on Management of Emergent Digital EcoSystems* (ACM MEDES 2012).

14. Birhanu Eshete, **Komminist Weldemariam**, Adolfo Villafiorita. Early Detection of Security Misconfiguration Vulnerabilities in Web Applications. *In Proceedings of the Sixth IEEE International Conference on Availability, Reliability and Security* (ARES 2011).

15. Birhanu Eshete, Adolfo Villafiorita, **Komminist Weldemariam**. Malicious Website Detection: Effectiveness and Efficiency Issues. *In Proceedings of the International SysSec Workshop (2011), In conjunction with the Eighth Conference on Detection of Intrusions and Malware & Vulnerability Assessment.*

16. Ali Fawzi Najm Al-Shammari, **Komminist Weldemariam**, Adolfo Villafiorita, Sergio Tessaris. Vote Verification through Open Standard: A Roadmap. *In Proceedings of the Second IEEE Workshop on Requirements Engineering for E-voting System* (REVOTE 2011).

17. Aaron Ciaghi, **Komminist Weldemariam**, Adolfo Villafiorita. Law Modeling with Ontological Support and BPMN: a Case Study. *In Proceedings of the International Conference on Technical and Legal Aspects of the e-Society* (CYBERLAWS 2011).

18. **Komminist Weldemariam** and Adolfo Villafiorita. A Formal Methodology for Procedural Security Assessment. *In Proceedings of the International Conference on Digital Society* (ICDS 2011).

19. Biniyam Asfaw, Dawit Bekele, Birhanu Eshete, Adolfo Villafiorita, **Komminist Weldemariam**. Host-Based Anomaly Detection for Pervasive Medical Systems. *In Proceedings of the International IEEE Conference on Risks and Security of Internet and Systems* (CRiSIS 2010).

20. **Komminist Weldemariam** and Adolfo Villafiorita. A Survey: Electronic Voting Development and Trends. *In Proceedings of the International Conference on Electronic Voting* (EVOTE'10).

21. Birhanu Eshete, Andrea Mattiolli, Adolfo Villafiorita, **Komminist Weldemariam**. ICT for Good: Opportunities, Challenges and the Way Forward. *In Proceedings of the International Conference on Digital Society* (ICDS 2010).

22. Dawit Bekele, Birhanu Eshete, Adolfo Villafiorita, **Komminist Weldemariam**. Context Information Refinement for Pervasive Medical Systems. *In Proceedings of the International Conference on Digital Society* (ICDS 2010).

23. **Komminist Weldemariam**, Adolfo Villafiorita, Angelo Susi, and Alberto Siena. Modeling and Analysis of Laws using BPR and Goal-oriented framework. *In Proceedings of the International Conference on Technical and Legal Aspects of the e-Society* (CYBERLAWS 2010).

24. **Komminist Weldemariam**, Richard Kemmerer, Adolfo Villafiorita. Formal Specification and Analysis of an e-Voting System. *In Proceedings of the IEEE International Conference on Availability, Reliability and Security* (ARES 2010).

25. Aaron Ciaghi, **Komminist Weldemariam**, Adolfo Villafiorita, Andrea Mattioli, Quoc-Sang Phan. Supporting Public Administration with an Integrated BPR Environment. *In Proceedings of the ICST Conference on e-Infrastructure and e-Services for Developing Countries* (AFRICOMM'09).

26. **Komminist Weldemariam**, Richard Kemmerer, Adolfo Villafiorita. Formal Analysis of Attacks for e-voting System. *In Proceedings of the International Conference on Risks and Security of Internet and Systems* (CRiSIS 2009).

27. **Komminist Weldemariam**, Andrea Mattioli, Adolfo Villafiorita. Managing Requirements for e-voting Systems: Issues and Approaches Motivated by a Case Study. *In Proceedings of the First IEEE International Workshop on Requirements Engineering for E-voting System* (REVOTE 2009).

28. **Komminist Weldemariam**, Adolfo Villariorita, Andrea Mattioli. Experiments and Data Analysis of Electronic Voting System. *In Proceedings of the International Conference on Risks and Security of Internet and Systems* (CRiSIS 2009).

29. **Komminist Weldemariam**, Adolfo Villariorita. Formal Procedural Security Modeling and Analysis. *In Proceedings of the International Conference on Risks and Security of Internet and Systems* (CRiSIS 2008).

30. **Komminist Weldemariam**, Adolfo Villafiorita. A Methodology for Assessing Procedural Security: A Case Study in E-Voting. *In Proceedings of the International Conference on Electronic Voting* (EVOTE 2008).

31. **Komminist Weldemariam**. Navigational Web-interfaces from Formal Tropos Specifications. *In Proceedings of the 10th Annual International Workshop "Engineering Societies in the Agents' World"* (ESAW'09).

32. **Komminist Weldemariam**, Adolfo Villariorita. Modeling and Analysis of Procedural Security in (e)Voting: the Trentino's Approach and Experiences. *In Proceedings of the 3rd USENIX Electronic Voting Technology* (EVT 2008).

33. **Komminist Weldemariam**, Adolfo Villariorita, Andrea Mattioli. Assessing Procedural Risks and Threats in e-Voting: Challenges and an Approach. *In Proceedings of the International Conference on E-Voting and Identity* (VOTE-ID 2007).

34. Henok Sahilu, Amanuel Zewge, **Komminist Weldemariam**, Adolfo Villafiorita, Mesfin Belachew. Towards Designing an Architecture for Delivering Distributed Agricultural Information Services for Developing Countries. *Proceedings of the 2nd ACM Symposium on Computing for Development* (ACM DEV '12).

Thesis

35. **Komminist Weldemariam**. Using Formal Methods for Building more Reliable and Secure e-voting Systems. *Ph.D. Dissertation, University.* Trento, Trento, March 2010.

36. **Komminist Weldemariam**. A Rapid Application Prototyping from Agent-Oriented Specifications. *Master Dissertation, Indian Institute of Technology.* Bombay, August 2006.

Miscellaneous
(Non-Referred)

37. **Komminist Weldemariam**, Richard Kemmerer, Adolfo Villafiorita. Specification and Analysis of the Electronic Voting Process for the ES&S Voting System. *Technical Report Department of Computer Science,University of California, Santa Barbara, March 2009.*

38. **Komminist Weldemariam** Procedural Security Analysis (Poster) *ISSTA Doctoral Symposium, Seattle, Washington, July 2008.*

Tool Demo

39. Aaron Ciaghi Birhanu Eshete, **Komminist Weldemariam**. Bring the Food: A Mobile/Web App to Combat Food Waste. *In The International Conference on Information and Communication Technologies and Development* (ICTD'12).

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Kingston, ON Canada