Curriculum Vitae: Stefan Axelsson

Dept. of Systems and Software Engineering
Blekinge Institute of Technology
Box 520
SE-372 25 Ronneby
Sweden
tel: +46 (0)705 358559 (mobile)
email: stefan.axelsson@bth.se
web: http://dr.stefan.axelsson.googlepages.com

Background Assistant/Associate Professor (Swedish "Lektor") of computer security at Blekinge Institute of Technology. More than ten years professional experience of computer and information security from research at Chalmers and Blekinge Institute of Technology and working with security at Ericsson.

Education

- **Chalmers**, Dept. of Computer Science, Göteborg, Sweden. (July 2002–Jan 2005)
  Ph.D. in Computer Science, Thesis: *Understanding Intrusion Detection Through Visualisation.*
- **Chalmers**, Dept. of Computer Engineering, Göteborg, Sweden. (Sept 1996–March 2000)
  Licentiate of Engineering in Computer Engineering, Thesis: *Aspects of the Modelling and Performance of Intrusion Detection.*
- **Chalmers**, Göteborg, Sweden. (1987–ca 1993)
  Master of Science with a degree in Computer Science and Engineering.

Research interests Computer Security, Visualisation, Intrusion Detection, Information, Human-Computer interaction, Usability. Specifically:

Previously; research into the application of information visualisation to intrusion detection in order to increase the usability of intrusion detection systems. Especially making automated classification algorithms understandable by the user, from an operational, as opposed to an educational, perspective.

Currently; the application of the techniques developed in my previous research to areas outside intrusion detection in particular, and security as a whole.

Publications **Summary** One book; Springer Verlag. Two theses (PhD and Licentiate). One article in a scientific journal (sole author). Seven conference and workshop contributions to peer-reviewed conferences and workshops (sole author of five of these). Four technical reports (sole author). These publications have together been cited more than 450 times according to *Google Scholar*, excluding self citations.

Book and Journal Article

- *Understanding Intrusion Detection Through Visualisation*, Stefan Axelsson, David Sands, In the series: Advances in Information Security, Sushil Jajodia (Ed.), Springer Verlag, Nov. 2005, ISBN: 0-387-27634-3, Series ISSN: 1568-2633.
- *The base-rate fallacy and the difficulty of intrusion detection*, Stefan Axelsson, ACM Transactions on Information and System Security (TISSEC), 3(3), pp. 186-205, ACM Press, ISSN: 1094-9224, 2000.

Articles in Refereed Conference and Workshop Proceedings

- *Combining A Bayesian Classifier with Visualisation: Understanding the IDS*, Stefan Axelsson, In the proceedings of the ACM CCS Workshop on Visualization and Data Mining for Computer Security, (Held in conjunction with the Eleventh ACM Conference on Computer and Communications Security), Oct 29, 2004.
- *Visualising Intrusions: Watching the Webserver*, Stefan Axelsson, In the proceedings of the 19th IFIP International Information Security Conference (SEC2004), Tolouse France, 22-27 Aug, 2004.
- *Visualization for Intrusion Detection: Hooking the worm*, Stefan Axelsson, In the proceedings of the 8th European Symposium on Research in Computer Security (ESORICS 2003), Springer Verlag: LNCS 2808, 13-15 Oct, Gjøvik Norway, 2003.
- *The Base-Rate Fallacy and its Implications for the Difficulty of Intrusion Detection*, Stefan Axelsson, In Proceedings of the 6th ACM Conference on Computer and Communications Security, pp. 1-7, Kent Ridge Digital Labs, Singapore, November 1-4, 1999.
- *On a Difficulty of Intrusion Detection*, Stefan Axelsson, 2nd Intl. Workshop on Recent Advances in Intrusion Detection (RAID'99), Purdue University, West Lafayette, Indiana, USA, September 7-9, 1999,
- *A Comparison of the Security of Windows NT and UNIX*, Hans Hedbom, Stefan Lindskog, Stefan Axelsson, Erland Jonsson, Presented at the Third Nordic Workshop on Secure IT Systems, NORD-SEC'98, 5-6 November, 1998, Trondheim, Norway.
- *An Approach to UNIX Security Logging*, Stefan Axelsson, Ulf Lindqvist, Ulf Gustafson, Erland Jonsson, In Proceedings of the 21st National Information Systems Security Conference, pp. 62-75, Oct. 5-8, Crystal City, Arlington, VA, USA, 1998.

Technical Reports

- *Visualising the inner workings of a self learning classifier: Improving the usability of intrusion detection systems*, Stefan Axelsson, Technical Report, Dept. of Computer Science, Chalmers University of Technology, Nov 2004.
- *A Preliminary Attempt to Apply Detection and Estimation Theory to Intrusion Detection*, Stefan Axelsson, Technical Report No 00-4, Dept. of Computer Engineering, Chalmers University of Technology, Sweden, March 2000.
- *Intrusion Detection Systems: A Taxonomy and Survey*, Stefan Axelsson, Technical Report No 99-15, Dept. of Computer Engineering, Chalmers University of Technology, Sweden, March 2000.
- *Research in Intrusion Detection Systems: A Survey*, Stefan Axelsson, Technical Report No 98-17, Dept. of Computer Engineering, Chalmers University of Technology, Sweden, Dec 15, 1998 revised Aug 19, 1999.

Publicly Available Software

- *BayesVis* Visualisation of a naive Bayesian classifier. Described in "Combining A Bayesian Classifier with Visualisation: Understanding the IDS". Released under the GPL.
- *Chi2Vis* Visualisation of a Chi square based sliding window classifier. Described in "Visualising the inner workings of a self learning classifier: Improving the usability of intrusion detection systems." Released under the GPL.

Professional Activities

- *Co-chair* Publications Co-chair for 3rd International Workshop on Visualization for Computer Security (VizSec'06), held in conjunction with the 13:th ACM Conference on Computer and Communications Security (CCS 2006), Oct 30–Nov 3, 2006, Alexandria, VA, USA.
- *Program committee member* Member of the program committee for the 4th International Workshop on Visualization for Computer Security (VizSec'07), and 5th International Workshop on Visualization for Computer Security (VizSec'08).
- *Invited panelist* Invited panelist on the panel "Intrusion detection", chaired by Teresa Lunt, at the 13:th Computer Security Foundations Workshop (CSFW'00), 3–5 July, 2000, Cambridge, England.

- *Reviewer* I have reviewed numerous publications for journals and conferences, e.g. ACM Transactions on Security, IEEE Security & Privacy, etc.
- *Popular presentations* I have made several popular appearances including having been interviewed in Swedish *TV4 news*, several major Swedish newspapers and the Swedish weekly *NyTeknik*. I have also made several popular presentations, most recently at "*Informationssäkerhetsdagen*" held at Karlstad University Dec 7, 2006.

Work experience

- **Univ. lecturer/Assoc. Prof.** Blekinge Institute of Technology 2007–Present
  "Lektor"/Associate Professor at the Department of Systems and Software Engineering Blekinge Institute of Technology. Teaching courses in security and computer science. Performing research within computer security.
- **System manager/Senior Specialist** Ericsson AB, Göteborg (2000–2006)
  System manager for PCN (Packet Core Network). Responsible for the security in Ericsson's product flora: SGSN, GGSN, CGSN (Nodes/routers for mobile internet) SACC/SASN (Nodes for deep-packet inspection) and support nodes and support systems for these. Started as a system manager at the GSN organisation; developing network nodes for 2G/3G mobile Internet communication systems (GSM and UMTS/GPRS), working mainly with security.
- **PhD Student/Lecturer** Chalmers, Dept. of Computer Science, (2002–2005)
  80% of full time. Research in computer security, especially the application of information visualisation to intrusion detection.
- **PhD Student/Teaching Asst.** Chalmers, Dept. of Computer Engineering. (1996–2000)
  Research in computer security, especially intrusion detection.
- **Programmer** *Stift. Medicin & Teknik* (*Foundation for Medical Technology*) (1995–1996)
  Took part in the development of a general measurement and analysis system for medical use.
- **Research assistant/System developer** SKF AB, Göteborg, Sweden. (1993–1994)
  SKF research laboratory. Designed and implemented a measurement and analysis system for measurements on roller bearings.