

# ELIZABETH STOBERT

## CURRICULUM VITAE

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### PERSONAL DETAILS

School of Computer Science, Carleton University  
1125 Colonel By Drive Ottawa, ON, Canada, K1S 5B6  
Email: elizabeth.stobert@carleton.ca  
Homepage: [www.stobert.ca](http://www.stobert.ca)  
Citizenship: Canadian  
Languages: English, French

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### RESEARCH EXPERIENCE

- 2019 – Present** Assistant Professor, School of Computer Science (Carleton University)
- 2019** Associate Research Officer, Digital Technologies Research Centre (National Research Council of Canada)  
Adjunct Research Professor, School of Computer Science (Carleton University)
- 2018** Postdoctoral researcher, Concordia Institute for Information Systems Engineering (Concordia University)  
Supervisor: Dr. Jeremy Clark
- 2015–2017** Senior researcher, System Security Group (ETH Zürich)  
Supervisor: Dr. Srdjan Čapkun
- 2011–2015** *Ph.D.* Computer Science, Carleton University  
Supervisor: Dr. Robert Biddle
- 2009–2011** *M.A.* Cognitive Psychology, Carleton University (Concentration in HCI)
- 2008–2009** *B.A. Honours*, Psychology, Carleton University
- 2004–2008** *B.Math.*, Mathematics, Carleton University

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### TEACHING EXPERIENCE

- 2019–Present** Assistant Professor (School of Computer Science, Carleton University)
- COMP 5210: HCI Models, Theories & Frameworks
  - HCIN 5100: Fundamentals of HCI Design & Evaluation

<b>2017–2018</b>	<b>Contract Instructor (HCI Masters Program, Carleton University)</b> <ul style="list-style-type: none"> <li>• HCIN 5100: Fundamentals of HCI Design &amp; Evaluation</li> </ul>
<b>2017</b>	<b>SecHuman Summer School</b>
<b>2015–2016</b>	<b>Co-instructor of Graduate Seminar Course on Current Topics in Information Security (Department of Computer Science, ETH Zürich)</b>

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## STUDENT SUPERVISION

### Honours Projects

Sarah Oloumi (“PortioPass: A Password Sharing Application”, Summer 2020)  
Samuel Mitchell (“A Usability Analysis of Canadian Open Government Data Presentation”, Winter 2020)

### Masters Students

Aniqa Binte Alam (Sole-supervised, “Designing Security Software for Cultural Differences”, expected graduation 2021)  
Lin Kyi (Co-supervised with Robert Biddle, “Personality and Password Management”, expected graduation 2021)  
Tina Safaie (Student at Concordia University, co-supervised with Mohammad Mannan and Amr Youssef, “ByPass: Easing Password Manager Adoption”, expected graduation 2020)

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## SERVICE

### Technical Program Committee Member:

<b>2020</b>	Symposium on Usable Privacy and Security (SOUPS), IEEE European Symposium on Security and Privacy (EuroS&P), IEEE Workshop on the Internet of Safe Things (SafeThings)
<b>2019</b>	Usable Security Workshop (USEC), Symposium on Usable Privacy and Security (SOUPS), European Workshop on Usable Security (EuroUSEC), International Workshop on Socio-Technical Aspects in Security and Trust (STAST)
<b>2018</b>	IEEE European Symposium on Security and Privacy (EuroS&P), Online Privacy and Data Security (OPDS), International Workshop on Socio-Technical Aspects in Security and Trust (STAST)
<b>2017</b>	Symposium on Usable Privacy and Security (SOUPS), New Security Paradigms Workshop (NSPW), European Workshop on Usable Security (EuroUSEC), Cryptology and Network Security (CANS), International Workshop on Socio-Technical Aspects in Security and Trust (STAST)
<b>2016</b>	Usable Security Workshop (USEC), New Security Paradigms Workshop (NSPW), European Workshop on Usable Security (EuroUSEC), International Conference on Passwords, International Workshop on Socio-Technical Aspects in Security and Trust (STAST)
<b>2015</b>	New Security Paradigms Workshop (NSPW)

**Journal Reviewer:**

ACM Transactions on Privacy and Security  
ACM Transactions on Multimedia Computing, Communications and Applications  
ACM Transactions on Computer-Human Interaction  
Communications of the ACM  
Behaviour & Information Technology (Taylor & Francis)  
Computers & Security (Elsevier)  
IEEE Internet Computing  
IEEE Security & Privacy  
IEEE Transactions on Dependable and Secure Computing  
IEEE Transactions on Information Forensics & Security  
Interacting with Computers (Oxford University Press)

**Grant Reviewer:**

- 2019** Expert evaluator for “Bridge Young Scientists” R&D Funding Programme (Austrian Research Promotion Agency)
- 2017** Expert evaluator for “ICT of the Future” R&D Funding Programme (Austrian Research Promotion Agency)  
Evaluated grant applications in the area of “Internet of Things - Safe, Secure, and Usable”

**Leadership:**

- 2019–2020** NSPW Program Co-chair
- 2018** CCS Posters Co-Chair
- 2014, 2016 – 2020** Who are you?! Adventures in Authentication: WAY Workshop Co-chair and organizer
- 2015 – 2017** SOUPS Lightning Talks and Demos Chair
- 2017** John Karat Usable Privacy and Security Student Research Award Selection Committee Member
- 2015** NSPW Publicity Chair
- 2013** ISSNet Summer Week Co-chair

**Thesis Committee Member:**

- 2019** Rebecca Jeong (M.HCI), Michael Lutaaya (M.CS), Alexandra Mesley (M.HCI), Jessica Rocheleau (M.HCI), and Daniela Ghanbari Vahid (M.HCI)
- 2020** Sandra Gabriele (M.HCI)

**University Committee Member:**

- 2019–2020** SCS Hiring Committee (Tenure-Track Assistant Professor in AI/ML)  
Institute of Cognitive Science Hiring Committee (1-yr Term Instructor)

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**FUNDING & AWARDS**

- 2020–2025** NSERC Discovery Grant (\$24,000/year)
- 2020–2021** NSERC Discovery Grant Launch Supplement (\$12,500)
- 2018–2019** NSERC PDF Fellowship (\$45,000/year)

<b>2017–2022</b>	MIWF Förderlinie “Digitale Sicherheit” (€600,000, approx. \$900,000) – Declined (Funding awarded from the Ministry of Innovation, Science and Research (MIWF) of the state of North Rhine Westphalia (Germany) for the formation of a research group.)
<b>2015</b>	Best Paper Award: International Conference on Passwords
<b>2011–2014</b>	NSERC CGS-D3 Scholarship (\$35,000/year)
<b>2013</b>	Pass with Distinction on PhD comprehensive exams
<b>2010–2011</b>	NSERC CGS-M Scholarship (\$17,500/year)
<b>2010</b>	3 <sup>rd</sup> place undergraduate finalist in CHI Student Research Competition
<b>2009–2015</b>	Carleton University Departmental Graduate Scholarships (\$5,000/year)
<b>2004</b>	R.L.Rosenberg Memorial Scholarship (\$1,000)

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## PRESENTATIONS

<b>2020</b>	<b>The Password Life Cycle</b> Invited presentation in the CLUE seminar series at Carleton University. Ottawa, Canada.
<b>2018</b>	<b>Cybersecurity in Health Care</b> Invited presentation at Emergency Preparedness in Healthcare Conference. Montreal, Canada.  <b>Exploring the Usability of Two-factor Authentication</b> Invited talk at Carleton University. Ottawa, Canada. Host: Dr. Paul van Oorschot. <b>The Password Life Cycle</b> Invited talk at Polytechnique Montreal. Montreal, Canada. Host: Dr. Pierre Langlois.
<b>2017</b>	<b>Cognition-Informed Security</b> Invited talk at McMaster University. Hamilton, Canada. Host: Dr. Ridha Khedri. <b>Cognition-Informed Security</b> Invited presentation at Ruhr-Universität Bochum, Germany. Host: Dr. Thorsten Holz. <b>Coping with Passwords: Experts vs. Ordinary Users</b> Invited conference presentation at Security and Human Behaviour Workshop. Cambridge, UK. <b>Exploring the Usability of Two-factor Authentication</b> Invited talk at Carnegie Mellon University. Pittsburgh, USA. Host: Dr. Lujo Bauer. <b>Password-Based Protection of Privacy and Personal Data: friend or foe?</b> Invited panelist at Computers, Privacy & Data Protection Conference (CPDP). Brussels, Belgium.
<b>2016</b>	<b>Usable Security: From weakest link to powerful ally</b> Invited speaker in the UBS Security Champions Training Series. Zürich, Switzerland.  <b>Exploring Website Location as a Security Indicator</b> Invited talk at Technical University of Berlin, Germany. Host: Lydia Kraus  <b>What do users want from mobile authentication?</b> E. Stobert & R. Biddle. Conference presentation at <i>Privacy Berlin 2016</i> . Berlin, Germany.  <b>The Psychology of Passwords</b> Invited talk at University of Innsbruck, Austria. Host: Dr. Rainer Böhme

- 2015**      **The Password Life Cycle: How users and experts cope with passwords**  
Invited talk at Ruhr-Universität Bochum, Germany. Host: Dr. Markus Duermuth
- Coping Strategies for Password Management**  
Invited talk at University of Zürich, Switzerland. Host: Helen Ai He
- 2014**      **The Password Life Cycle**  
Invited talk at ETH Zürich, Switzerland. Host: Dr. Srdjan Čapkun
- 2013**      **Memory Retrieval and Graphical Passwords**  
Invited talk at University of New Brunswick, Canada. Host: Dr. Natalia Stakhanova
- A Password Manager that Doesn't Remember Passwords**  
Conference presentation at *GRAND 2013*. Toronto, Canada.
- GREPSEC Workshop**  
Participant in the GREPSEC Workshop for Women and Underrepresented Minorities working in Computer Security.
- 2012**      **Visual End-User Security**  
Graduate Consortium, IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC). Innsbruck, Austria.
- User-Choice Patterns in PassTiles Graphical Passwords.**  
Conference presentation at *GRAND 2012*. Montreal, Canada.
- 2010**      **Helping Users Build Mental Models of Computer Security**  
Doctoral consortium, International Conference on Persuasive Technology. Copenhagen, Denmark.
- Usability and Strength in Click-based Graphical Passwords**  
Invited talk at ACM SIGCHI Ottawa Chapter (CapCHI). Host: Dr. Andrew Patrick.

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## PUBLICATIONS

### Refereed Journal Papers:

- 2018**      **Teaching Authentication as a Life Skill** E. Stobert, E. Cavar, L. Malisa, & D. Sommer.  
*IEEE Security & Privacy Magazine*. September-October 2018. (5 pages)
- The Password Life Cycle.** E. Stobert & R. Biddle.  
*ACM Transactions on Privacy and Security (TOPS)*. April 2018. (30 pages)
- OmniShare: Encrypted Cloud Storage for the Multi-Device Era.** A. Pavard, S. Tamrakar, H.L. Nguyen, P.K. Pendyala, T.D. Nguyen, E. Stobert, T. Gröndahl, N. Asokan, & A-R. Sadeghi.  
*IEEE Internet Computing*. April 2018. (7 pages)
- 2012**      **Persuasive Cued Click-Points: Design, implementation, and evaluation of a knowledge-based authentication mechanism.** S. Chiasson, E. Stobert, A. Forget, R. Biddle, & P.C. van Oorschot.  
*IEEE Transactions on Dependable and Secure Computing (TDSC)*, 2012. (15 pages)

### Refereed Conference Papers:

- 2020**      **Understanding Cybersecurity Practices in Emergency Departments** E. Stobert, D. Barrera, V. Homier, & D. Kollek.  
*Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI 2020)*. ACM. (April 2020)

- Security Matters ... Until Something Else Matters More: Cybersecurity Awareness of Users on Device Form Factors.** H. Molyneaux, E. Stobert, I. Kondratova, & M. Gaudet.  
*Proceedings of the International Conference on Human-Computer Interaction (HCII 2020)*. Springer LNCS. (To appear, August 2020)
- 2019**      **Work in Progress: A Comparative Long-Term Study of Fallback Authentication** P. Markert, M. Golla, E. Stobert & M. Duermuth.  
*Proceedings of the NDSS Workshop on Usable Security 2019 (USEC)*. Internet Society. (February 2019)
- Understanding Perceptions: User Responses to Browser Warning Messages**  
H. Molyneaux, I. Kondratova, & E. Stobert.  
*Proceedings of the International Conference on Human-Computer Interaction (HCII 2019)*. Springer LNCS. (August 2019)
- 2018**      **Exploring Website Location as a Security Indicator.** D.Y. Yu, E. Stobert, D. Basin, & S. Capkun.  
*Proceedings of the NDSS Workshop on Usable Security 2018 (USEC)*. San Diego, USA. Internet Society. February 2018. (34% acceptance rate, 10 pages)
- 2017**      **Teaching Authentication in High Schools: Challenges and Lessons Learned.**  
E. Stobert, E. Cavar, L. Malisa & D. Sommer.  
*Proceedings of the 2017 USENIX Workshop on Advances in Security Education*, Vancouver, Canada. USENIX. August 2017. (16 pages)
- 2016**      **Mobile Device Security: Hopes and Fears.** E. Stobert, I. Reyes, C. Gates, & R. Biddle.  
*Proceedings of the 10th International Conference on Passwords*, Bochum, Germany. LNCS. December 2016. (16 pages)
- [Short Paper] Picking a (Smart)Lock: Locking Relationships on Mobile Devices.** E. Stobert & D. Barrera.  
*Proceedings of Who Are You?!: Adventures in Authentication Workshop (WAY)*, Denver, USA. June 2016. (2 pages)
- 2015**      **Expert Password Management.** E. Stobert & R. Biddle.  
*Proceedings of the 9th International Conference on Passwords*, Cambridge, UK. LNCS. December 2015. (16 pages, 33% acceptance rate, winner of the best paper award)
- A First Look at the Usability of Bitcoin Key Management.** S. Eskandari, D. Barrera, E. Stobert & J. Clark.  
*Proceedings of the NDSS Workshop on Usable Security 2015 (USEC)*, San Diego, USA. Internet Society. February 2015. (10 pages, 38% acceptance rate)
- 2014**      **A Password Manager that Doesn't Remember Passwords.** E. Stobert & R. Biddle.  
*Proceedings of the New Security Paradigms Workshop (NSPW)*, Victoria, Canada. ACM. September 2014. (14 pages, 30% acceptance rate)
- The Password Life Cycle: User Behaviour in Managing Passwords.** E. Stobert & R. Biddle.  
*Proceedings of the Symposium on Usable Privacy and Security (SOUPS)*, Menlo Park, USA. USENIX. July 2014. (12 pages, 27% acceptance rate)
- 2013**      **Memory Retrieval and Graphical Passwords.** E. Stobert & R. Biddle.  
*Proceedings of the Symposium on Usable Privacy and Security (SOUPS)*, Newcastle, UK. ACM. July 2013. (12 pages, 29% acceptance rate)

- [Short Paper] **Authentication in the Home.** E. Stobert & R. Biddle.  
*Proceedings of the Workshop on Home Usable Privacy and Security (HUPS)*, Newcastle, UK. July 2013. (4 pages)
- 2012 [Short Paper] **The MVP Web-based Authentication Framework.** S. Chiasson, C. Deschamps, E. Stobert, M. Hlywa, B. Freitas Machado, A. Forget, N. Wright, G. Chan, R. Biddle.  
*Proceedings of Financial Cryptography (FC)*, Bonaire. LNCS. February 2012. (8 pages, 33% acceptance rate)
- 2010 **Exploring Usability Effects of Increasing Security in Click-Based Graphical Passwords.** E. Stobert, A. Forget, S. Chiasson, P.C. van Oorschot & R. Biddle.  
*Proceedings of the Annual Computer Security Applications Conference (ACSAC)*, Austin, USA. ACM. December 2010. (10 pages, 16% acceptance rate)
- 2009 **Multiple Password Interference in Text and Click-based Graphical Passwords.** S. Chiasson, A. Forget, E. Stobert, P.C. van Oorschot & R. Biddle.  
*Proceedings of the ACM Conference on Computer and Communications Security (CCS)*, Chicago, USA. ACM. November 2009. (10 pages, 18% acceptance rate)

#### Refereed Posters:

- 2015 **How Do Experts Manage their Passwords?** E. Stobert & R. Biddle.  
*Symposium on Usable Privacy and Security (SOUPS)*, Ottawa, Canada. USENIX Association. July 2015.
- 2014 **The Agony of Passwords: Can we learn from user coping strategies?** E. Stobert.  
*ACM Conference on Human Factors in Computing Systems (CHI)*, Toronto, Canada. ACM. April 2014.
- Semi-finalist in the international student research competition.
- 2010 **Persuasion, Social Graces, and Computer Security.** E. Stobert, S. Chiasson & R. Biddle. *5th International Conference on Persuasive Technology*, Copenhagen, Denmark. LNCS. June 2010.
- Usability and Strength in Click-based Graphical Passwords.** E. Stobert.  
*ACM Conference on Human Factors in Computing Systems (CHI)*, Atlanta, USA. ACM. April 2010.
- 3<sup>rd</sup> place finalist in the international student research competition

#### Theses:

- 2015 **Graphical Passwords and Practical Password Management**  
**E. Stobert.**  
 School of Computer Science, Carleton University, Ottawa, Canada. May 2015.
- 2011 **Memorability of Assigned Random Graphical Passwords**  
**E. Stobert.**  
 Department of Psychology, Carleton University, Ottawa, Canada. August 2011.

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#### REFERENCES

References available upon request