

# Jem Berkes

416-477-1527 • www.berkes.ca • jem@berkes.ca

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## WORK HISTORY:

### Research Lead

- Galois, Inc. Portland, OR, USA Feb 2014 – current
- Principal Investigator (PI) for DDoS Defense project funded by Department of Homeland Security
  - Provide recommendations and findings to US Government Program Managers
  - Project Management experience
  - Expertise in software, high-tech, privacy, cyber threats, software/hardware defense, malware
  - Working on bleeding-edge technology for DARPA (scientific R&D)
  - Responsible for requirements, scoping work, estimating time lines, and planning milestones
  - Responsible for technology research, including speculative research and development (R&D)
  - Significant experience presenting data and status updates to government audiences

### Design Engineer, Advanced

- Altera Corporation Toronto, ON Jan 2010 – May 2012
- Developed programmable chip (FPGA) products, high-speed microchips at 28 nm
  - Project Management with small teams
  - Developed modeling software to simulate and optimize microchip designs
  - Designed and implemented new forms of automation

### NSERC Researcher (Masters student and Research Assistant)

- University of Waterloo Waterloo, ON Sept 2005 – Feb 2008
- Side channel attack research with RFID and smart cards. Discovered a new form of wireless security attack. Worked with Centre for Applied Cryptographic Research (CACR).

### Entrepreneur / small business owner

- SysDesign Winnipeg, MB 1997 – 2010
- Designed computer software (security and data management tools) for engineering and government customers. Performed sales, marketing, technical writing, and licensing. Operated in Winnipeg MB, Toronto ON, and Brisbane QLD Australia. [See NSERC press release about my business.](#)

Customers include: Canadian Space Agency ; Government of Alberta, ACSC ; Florida State Government, Division of Emergency Management ; Haansoft (Korea) ; US Government, GSA.

## EDUCATION:

### Master of Applied Science in Electrical Engineering University of Waterloo, ON 2005 – 2008

- NSERC Julie Payette Scholarship winner, offered to 24 top Masters candidates (6 in Engineering)
- NSERC André Hamer Prize
- Research areas: signal analysis, cryptography, communication security, low-power hardware

### Bachelor of Science in Computer Engineering University of Manitoba, MB 2000 – 2005

- Awarded University Gold Medal (highest standing in Engineering) and Medal in Computer Engineering
- Undergraduate minor in Management, with courses in Accounting
- NSERC-funded laboratory researcher

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### **BUSINESS SKILLS:**

- Strong data analysis skills with both technical and financial data
- Project management experience
- Excellent writing skills
  - Reports, slide decks, whitepapers, status reports, documentation, academic papers
- Very strong communication skills
  - Presentations to government audiences (US Govt)
  - Presentations at conferences and corporations (guest talks)
- Experience negotiating and drafting contracts
- Experience working with US government, including contracting and budgeting
- Strong team skills; enjoy interdisciplinary environments
- Experienced world traveller; lived in Canada, USA, Australia
- Expert in Microsoft Word, Excel, PowerPoint (and OpenOffice equivalents)

### **TECHNICAL & ENGINEERING SKILLS:**

- Proficient in many programming languages: C, C++, x86 assembler, Java, Unix shell script, Python, Perl
- Expertise in data processing, scripting, analysis
- Experience with many platforms, especially Linux, FreeBSD, DOS, Windows
- Expert knowledge of network communication protocols & security: IPv4, IPv6, TCP, DNS, SSL/TLS
- Expertise in automation, hardware design for security, cryptographic implementations, side-channel attacks
- Experience working with electronics circuits, schematics, lab equipment
- 2 years experience with semiconductor manufacturing and yield issues, including on-chip variation (OCV)

### **AWARDS AND RESEARCH GRANTS:**

- University Gold Medal in Engineering and Medal in Computer Engineering, University of Manitoba (2005)
- NSERC Julie Payette scholarship winner, one of 6 “best PGS M candidates” in Engineering, all of Canada
- NSERC André Hamer prize winner, awarded to “most outstanding candidates” in graduate competition
- Finalist in 2001, 2002 UM/Management’s Student Entrepreneur of the Year Competition

### **HOBBIES AND RECREATION:**

- Bicycling, swimming (training with Manitoba Masters Aquatic Club), and surfing
- Beach volleyball (teams: university intramurals and Toronto Ashbridges League)
- Volunteered at Winnipeg Fringe Theatre Festival for several years
- Debating (high school and university clubs)
- Stock market analysis and quantitative approaches to financial markets