INTERNET

What I Do:	https://www.ccoderun.ca/stephane/
ML/CV:	https://www.ccoderun.ca/cv/
C++:	https://www.ccoderun.ca/portfolio/
Blog:	https://www.ccoderun.ca/programming/
LinkedIn:	http://www.linkedin.com/in/scharette
Email:	stephanecharette@gmail.com

CAREER

I'm a senior C/C++ software developer. I have > 30 years of commercial software development experience.

This is the *short version* of my résumé. It includes only the most recent information from the past decade. ***I also have a full version which is much longer since it contains details on over 30 years of experience.***

COMPUTER SKILLS

ML/CV:	opencv, yolo (v3 and v4), darknet, darkhelp, darkmark, machine learning (artificial neural networks to assist with computer vision)
Programming:	C++ (C++11, 14, and some 17), C, cmake/ctest/cpack, gdb, Visual Studio
OS:	Linux (Ubuntu & Debian: x86, AMD-64, ARM7, ARM8), Windows 7 & 10
Networking	Byte-level packet inspection and manipulation, Wireshark, tcpdump, UDP, TCP, IP, non-TCP high speed internet file transfers
Encryption	AES-CBC (advanced encryption standard, cipher block chaining), Blowfish, OpenSSL

EDUCATION

BC Institute of Technology	*Burnaby, British Columbia*
January 2000 to January 2001, part-time	Project planning, design and development skills (project estimation, software cost, Rose/UML, rapid GUI prototyping using Delphi)
Bishop's University	*Lennoxville, Québec*
September 1993 to December 1996	B.Sc., Computer Science; completed 3 years of 4. All required 3rd and 4th year Computer Science course requirements were completed in first 2 years.

EMPLOYMENT

Art + Logic
July 2019 to present

- built several neural networks with the Darknet machine learning framework, YOLOv3, and YOLOv3-Tiny for a proof-of-concept linux-based robotic application
- worked with libraries such as ZBar, Zint, and OpenCV to recognize and create several types of barcodes
- audio processing using JUCE, wrote a VST3 plugin for audio sampling product on Windows and Mac
- converted legacy JUCE application into VST3 plugin

C Code Run
June 2000 to present

- consulted on many projects, the last few of which are:
  - RobroSystems (2020)
    - trained a neural network to count objects moving on a conveyer belt
    - designed and wrote a C++ library which uses OpenCV to compare and find differences between images
    - trained a neural network to detect handwashing to help prevent the spread of COVID-19
    - trained a neural network to detect defects in bottle caps

- Adappt Intelligence (2020)
  - trained a neural network to detect and count the number of people in a room
- Oroville Reman & Reload (2020)
  - custom Windows C++ GUI application in JUCE and Linux PostgreSQL database server to track hardware maintenance at lumber mill
- EquiNordic Group (2019)
  - Linux C++ application using Darknet/YOLO and OpenCV to track shipping containers from a drone
- Unlimi-Tech FileCatalyst (2010-2020)
  - UDP-based high speed file transfer product
  - designed and wrote two commercial Linux, Windows, ARM, Mac and iOS C++ libraries for unlimi-tech's file transfer products, filecatalyst and workflow/spaces
  - transfers files thousands of times faster than popular/traditional TCP based methods
- Gorman Brothers Lumber Mill (2018-2019)
  - Windows and Linux C++ GUI application to interface with several moisture meter devices
- Gorman Brothers Lumber Mill (2018)
  - Windows and Linux C++ GUI application to interface with incjet printing devices
  - had to reverse-engineer undocumented proprietary files and network communication protocols
- Gorman Brothers Lumber Mill (2017-2019)
  - Windows and Linux C++ GUI application to track maintenance records
- StyleLine (2013-2018)
  - large gui application for door & drawer manufacturer
- Fastly, Inc. (2016)
  - analyzed and wrote several security reports on current and upcoming IoT vulnerabilities
  - focused on Mirai which had just been discovered in early fall 2016
- Turret Labs (2016-2017)
  - consulting: beaglebone and eps conduits

MicroSurvey

January 2017
to April 2019

- update STAR*NET, a 32-bit C/C++ least-square adjustment application for land surveyors
- port MFC application and legacy DOS code from the 1980s & 1990s to 64-bit Windows
- maintenance for MicroSurvey CAD, an IntelliCAD-based C/C++ CAD product for Windows
- combination of maintenance position, working on performance enhancements, bug fixes, and new development using Scintilla, MFC, TFS, and Hoops

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OPEN SOURCE

Open source
software projects   *Founder, designer, and/or contributor*

2007 to present

- DarkHelp, C++ library to import and run neural networks within C++ applications, https://www.ccoderun.ca/darkhelp/api/summary.html
- DarkMark, C++ tool for image markup and working with the neural network framework Darknet/YOLO, https://www.ccoderun.ca/darkmark/summary.html
- vz::ImgCmp, C++ OpenCV image comparison library, https://www.ccoderun.ca/programming/doxygen/vzic/
- vz::Imagination, image manipualtion and object detection with OpenCV, https://www.ccoderun.ca/vz_imagination/
- TinyAES++, library for AES CBC encryption and decryption, https://www.ccoderun.ca/programming/doxygen/tinyaes++/
- CamCap, C++ layer for Video4Linux, https://www.ccoderun.ca/programming/doxygen/camcap/
- SG++, library for IoT devices and Seeed Grove devices, https://www.ccoderun.ca/sg++/
- Myra Canyon, deep packet inspection on a Linux-based router, http://myra-canyon.sourceforge.net/
- EPS Conduits, virtual networking in Linux, https://www.ccoderun.ca/eps/
- SNMPpp, C++ layer for SNMP, http://snmppp.sourceforge.net/

- Gramps, release manager from 2007 to 2013 for python-based genealogy application, http://gramps-project.org/