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GOAL:

- To become part of an intense software engineering team where I can make a big impact.

SKILLS:

- C, C++, C#, Java, Embedded Systems, Assembly, QT, MFC, Python, Perl, MySQL
- RTOS, Device Drivers, Hardware Interface, Multiprocessor, Distributed Systems
- Quick learner, Highly observant, Effective Multitasker with lots of energy

WORK EXPERIENCE:

TomTom, Expert Software Engineer/Tech Lead - Amsterdam, NL (2017-)

- Technical lead for the software platform team for the TomTom Bridge, which was responsible for many hardware upgrades of the TomTom Bridge, most notably the introduction of **4G** support, and the TomTom HUB. This included hardware and software requirements refinement, as well as hardware bringup support.
- Technical lead for the software platform teams in Amsterdam and Bangalore as we rolled out an **Android** upgrade from Jellybean to Marshmallow for all existing Bridge devices, and for the initial release of the TomTom HUB.
- Ported custom TomTom software from Jellybean to Marshmallow in **C**, **C++**, **Java** and **Python**.
- Developed and maintained the **Android** platform and **automated tests** for the Bridge and HUB line of products, and interfaced with customers to resolve customer issues when necessary.

TomTom, Senior Software Engineer - Amsterdam, NL (2014-2017)

- Worked on the whole **Android** stack for a wide range of TomTom navigation devices including the TomTom GO, Rider, Trucker, Bridge, and others. This work involved **Linux device driver** development, **C++ HAL** development, and **Java** development in the higher layers of **Android**.
- Assisted in the hardware bringup for the most recent TomTom GO in Taipei.

Amsterdam Scientific Instruments, Lead Software Architect - Amsterdam, NL (2012-2014)

- Worked closely with hardware development and physicists to build a new high speed readout system for Timepix CMOS X-ray sensors.
- Responsible for high level hardware architecture design, and full **C/C++** software stack for the high speed readout system; including the following software modules:

- **Linux device driver** to interface directly to the **FPGA**, and **DMA** subsystems on **x86** and **Arm** processors.
- Linux **x86** and **Arm** firmware to interface with the device driver and store frame data on local hard drives, or send the frames over **TCP/IP** to a remote host.
- Developed a remote host API for **Windows**, **Linux**, and **OSX** to easily interface with the firmware from networked PCs using **boost**, and **cmake** to reduce cross platform differences.
- Developed a GUI plugin layer to interface the high speed readout system to **Java** based GUIs using **JNI**.
- Developed a fully **automated unit test suite** in **python** to test all major parts of the high speed readout system.
- Designed and developed the hardware and software for X-ray beam hardening calibration device.
 - **PCB design** of BeagleBone Black cape to drive 10 small DC motors, with 20 end stop switches.
 - Designed Linux firmware in **C++** to run on the BeagleBone Black and provide an easy to use TCP/IP interface for networked PCs to control the beam hardening calibrator.
 - Developed a remote host **C++** API for **Windows**, **Linux**, and **OSX** with **Boost** and **cmake** to allow easy command and control of the beam hardening calibrator.
 - Developed GUI module in **Java** with **JNI** to give end users full control of the beam hardening calibrator through the remote host API.
- Designed and developed the hardware and software for CMOS sensor temperature stabilization device.
 - **PCB design** of a small system that interfaces with Arduino Micro and controls Peltier modules to stabilize the temperature of the CMOS sensors.
 - Designed software for the Arduino to read the CMOS sensor temperature over **I²C** and implemented a PID controller to pulse width modulate the peltier based on the sensor temperature.
- Provided support and maintenance for previous generation of X-ray CMOS sensor readout systems.

Pegamento, Senior Software Engineer - Amsterdam, NL (2012-2012)

- Member of a team that develops Windows software to interface with legacy, web, and database systems in **C#**, **C++**, and **javascript** to modernize and automate business processes.
- Responsible for the system analysis to get an understanding of customer needs prior to solution development.
- Designing and developing a highly customisable web based CRM solution for small to medium businesses, that will be able to connect to legacy systems, web services, and databases.

Tekelec, Real Time Application Engineer - Amsterdam, NL (2010-2012)

- Member of an agile team that develops **Linux** and **Solaris** applications to facilitate mobile messaging (SMS), and related services.
- Develop next generation of subscriber database to manage 100 million subscribers in **MySQL Cluster**.
- Enhance **perl scripts** used for automated regression test in order to improve robustness and code coverage.

Tekelec, Embedded Real Time OS Software Engineer - Raleigh, NC (2002-2010)

- Member of a 10-person team that is responsible for developing a number of real time operating systems for a variety of **embedded systems** in **C**, **x86** and **ARM assembly**; including:
 - Tekelec proprietary **RTOS** running on systems from the Intel 286 to the P4 Xeon, and **Arm** based IXP1250, IXP2350, and EP9312.
 - VxWorks RTOS running on systems from the Intel 386 to the P4 Xeon.
- Implemented a number of low level modules; including: exception handlers/NMI, ISRs, SMBus interface, bootloader code, in system programming for devices such as **FPGAs**, flash chips, and **CPLDs**, and device drivers for 24 port Ethernet switch.
- Designed a number of high-level modules; including: application error reporting interface, live system fail-safe software upgrade, thermal management module (patent pending), Inter-processor communication module, **Multiprocessor** File I/O device driver.
- Developed a core infrastructure test application; this test application consisted of a server running on embedded **VxWorks** systems, and a **MFC GUI** client which communicates to the server over Ethernet.
- Collaborated with hardware team during board bring up for many new products.
- Troubleshoot, fix bugs, and develop enhancements in many different areas of the OS code base in both Rational ClearCase, and PVCS environments.

BOPS Inc., Embedded Applications Engineer - Raleigh, NC (2000-2002)

- Part of a team that designed, developed, tested, documented, and maintained a multi-platform real time embedded **DSP** OS. My responsibilities included **RTOS** design, host API design/development, compiler development, and system verification.
- Developed 2D/3D applications on the BOPS **DSP** iVLIW core in assembly, such as **OpenGL** 3D lighting model, and a 3D rasterization engine with perspective correct texture mapping.
- Actively participated in many other projects throughout the company including: coding standards committee, documentation standards committee, swat team, and the prototype team.

BOPS Inc., Toolset Developer - Raleigh, NC (internship, 1998-2000)

- Developed and maintained the BOPS **DSP** simulator, MFC debugger, **GNU** assembler, and other **GNU** utilities targeted for the BOPS platform.
- Implemented directed test case generators in Tcl, to verify the BOPS DSP simulator, and RTL.

EDUCATION:

North Carolina State University, Raleigh, NC (1996-2000)

- Bachelor of Science in Computer Science
- Concentration in 3D/Stereo Graphics programming

ACCOMPLISHMENTS:

- US Patent pending: Methods, systems and computer program products for thermal management of a processor associated with a network interface
- Publication: MacAllister, David F; Desjardins, Christopher J. "Geometric image processing of stereo pairs." Proc. SPIE Vol. 4297, p. 317-327 Abstract available at www.spie.org.

REFERENCES:

- References available at <http://nl.linkedin.com/in/chrisdesjardins/>