Norman Jaffe

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Work Experience:

- **Aurel Systems, Incorporated (2019-current) – Senior Systems Programmer**
  - Continued work on a dynamic electronic flowsheet for chemical processing. Aurel Systems (www.aurelsystems.com) provides the CADSIM Plus chemical process simulation tool, which is a very advanced process modeling tool for engineering processes that involve material or energy flows.
    - Technologies: C++, DDE, COM, Embarcadero RAD Studio, Microsoft Windows

- **Vecima Networks (2015–2019) – Senior Software Developer**
  - Worked on software to support the development of the Entra product. Created a Lua version of the 'collectd' system for gathering metrics. Worked as part of the CI team, developing scenarios using 'gauge' and Python.
    - Technologies: C/C++, Python, Lua, LPEG, bitbake, gauge, git, Linux, embedded systems

- **H+ Technologies and Simon Fraser University (2014–2015) – Software Developer**
  - Designed and developed the Movement and Meaning (**m+m**) middleware system (www.mplusm.ca) for the Moving Stories project; H+ Technologies (www.hplustech.com) is a manufacturer of tabletop holographic displays and is using the **m+m** system to connect 3D data sources to their Holus system; the Simon Fraser Moving Stories project (www.movingstories.ca) is an international industry–university collaboration to support the analysis and synthesis of movement data. I was hired to create the middleware system and to work with and train the engineers, students and professors who would be using the system.
    - Technologies: C++, JavaScript, Xcode, Visual Studio, CMake, git, Macintosh OS X

- **Absolute Software (2012–2014) – Software Systems Engineer IV (Mac Developer)**
  - Worked on the client software for the Macintosh products. Absolute Software (www.absolute.com) produces security software for mobile devices and desktop systems. I was hired to maintain and extend the CompuTrace product and its installer for Macintosh OS X.
    - Technologies: C++, Xcode, Macintosh OS X

- **POSH Mfg (2011–2012) – Software Engineer**

- Worked on a Macintosh utility to manage USB-based card readers. POSH Manufacturing (www.poshmfg.ca) is a manufacturer of Smart Card, magnetic card and RFID card readers and I was hired to develop a Macintosh OS X GUI application to configure and manage their devices.
    - Technologies: C++, Xcode, USB, Macintosh OS X

- **Webtech Wireless (2009–2011) – Senior Software Engineer**
    - Worked on an embedded automotive telematics platform, implemented several system services and re-implemented the command interpreter as Tcl extensions. Webtech Wireless (www.webtechwireless.com, merged with BSM Technologies in 2015, acquired by Geotab in 2019 (www.geotab.com/bsmtechnologies)) is a manufacturer of asset and vehicle tracking systems; I was hired to be a member of the firmware engineering team and I was involved in maintaining and extending the firmware for the in–vehicle devices.
        - Technologies: C++, Tcl, ARM, Crossworks, JTAG/SWD, FreeRTOS, embedded systems

- **Aurel Systems, Incorporated (2003–2009) – Senior Systems Programmer**
    - Worked on a dynamic electronic flowsheet for chemical processing. Aurel Systems (www.aurelsystems.com) provides the CADSIM Plus chemical process simulation tool, which is a very advanced process modeling tool for engineering processes that involve material or energy flows. I designed and developed the low–level simulation engine and the extension API for the simulation engine, as well as worked on the Microsoft Windows interface to the simulation engine.
        - Technologies: C++, DDE, COM, Embarcadero C++ Builder, Microsoft Windows

- **ATP Engineering, Limited (2000–2003) – Senior Systems Programmer**
    - Continued development of the Mobilidex system (renamed to ATP Access and then Everyware Solutions), worked on a suite of AutoCAD interpretation programs and a recursive database implemented using Java/JDBC. ATP Engineering (www.atpeng.com) is a provider of innovative software solutions for business applications; I was a member of the founding group of software developers.
        - Technologies: C++, Java, Microsoft Windows CE

- **INToo Software Corporation (1999–2000) – Senior Systems Programmer**
    - Co-developer of the Mobilidex network-based disk system, a remote client/server productivity tool written in Visual C++, which was awarded a U.S. patent (7,127,477) in 2006 and a Canadian patent (CA 2411294) in 2011.
        - Technologies: C++, Microsoft Windows CE

- **Hewlett–Packard Canada, Limited (1997–1999) – Technical Consultant, Global Sales Services, Systems Engineering Team**
    - Co-developer of Skills Access, an internal system written in Microsoft Access and VBA to match technical assistance questions to appropriate and available Technical Consultants.

    - Technologies: Microsoft Visual Basic

- **Aurel Systems (1990–1997) – Systems Programmer**
  - Worked on a dynamic electronic flowsheet, including a port to the Macintosh operating system. On contract to Hewlett–Packard for work with Hughes Canada, Systems Division, on the Canadian Advanced Air Traffic System, CAATS (1995–1997), in the area of Systems Management.
    - Technologies: C++, DDE, COM, Embarcadero C++ Builder, Microsoft Windows, Macintosh OS

- **Northwest Digital Research (1984–1990) – Systems Programmer**
  - Worked on graphics front end for contouring and analysis system, **VIEWSTAR** window system, automatic Pascal to FORTRAN translator, low level tape driver, general tool library for the HP 9000 Pascal system, X.25 LAPB subset controller, single–board satellite downlink, discrete event simulator. Acted as HP 9000 system manager.
    - Technologies: Pascal, Lisp, Assembler, X.25, HP 9000

- **Kockums CanCar (1981–1984) – Systems Programmer and Operations Manager**
  - Developed labeled tape support routines, resource usage tracking system, job file prompter/creator, extended Standard LISP interpreter, MC6809 emulator, MC6805 cross assembler, keyword in/out of context reporter/analyzer. Acted as HP 3000 system manager, Datapoint system manager, HP 1000 co–system manager and backup.
    - Technologies: Pascal, HP 3000, HP 1000

- **MacMillan Bloedel, Head Office, Vancouver (1979–1981) – Systems Programmer**
  - Member of the Technical Support group (1.5 years) and the Computer and Communications Technology group (8 months); developed graphics subsystem for IBM VM/CMS, intercommunication software for HP 3000/HP 1000 data transfer, APL line printer driver, source level FORTRAN IV cross reference analyzer (written in SNOBOL4), MC6800/MC6801 cross assembler, MC6809 cross assembler, macro processor. Acted as HP 3000 backup, DEC PDP 11/70 backup, IBM VM/CMS backup (for various periods) and HP 1000 systems manager.
    - Technologies: Pascal, Fortran, APL, HP 3000, HP 1000, IBM VM/CMS

- **Canadian Forest Products, Head Office, Vancouver (1977–1979) – Systems Programmer**
  - Programmer/analyst (1 year), Systems Programmer (6 months); developed data entry system for HP 1000, similar to (but before the announcement of) HP's V/3000. Acted as IBM VM/CMS backup, systems manager for HP 1000 (two sites), NOVA 3/D and MicroNOVA.
    - Technologies: Fortran, HP 1000, DG Nova

- **Canadian Forest Products, Howe Sound Pulp Division (1973–1977) – Systems Programmer**

- Lab assistant (6 months), computer programmer (1 year), Systems Programmer (3 years); worked on operating system maintenance for an IBM 1800 Process Control Computer. Developed source language cross reference generator for FORTRAN IV and Assembler (written in FORTRAN IV), file access cross reference generator, text processor modeled on U.B.C. FMT, several graphics packages, analog/digital simulation system, assembler simulator/debugger, line printer driver replacement. Developed (concurrently at S.F.U.) APL continuous system simulation system with integral compiler, PL/I preprocessor front–end for discrete simulator, Reticula data–base system internal routines. Acted as systems manager for IBM 1800.
    - Technologies: Fortran, Assembler, PL/1, APL, IBM 1800

- **University of Washington Chemistry department (1972) – research assistant / computer programmer**
    - Worked on fast data sampling and graphics software for high-speed T–jump and P–jump apparatus. Trained on nuclear magnetic resonance spectrometer, infra–red spectrometer, mass spectrometer and gas chromatography.
        - Technologies: Focal, PDP 8/L

Other Experience:

- Research Associate in wearable systems, S.F.U. (2002–present). Computer Lab assistant, S.F.U. Surrey, (2002–present). Developed Macintosh OS X and iOS applications for the Whisper[s] research group (http://www.siat.sfu.ca/research/groups/whispers/), of which I am a principal member.
- Taught Pascal at Vancouver Community College (1983), B.C.I.T. (1983), and at Douglas College (1989–1991).
- Teaching assistant in Pascal language courses (1982–1983) at B.C.I.T., Douglas College and the Technical University of British Columbia (now called S.F.U. Surrey).
- Co–taught a course on simulation systems and languages (1981) at S.F.U. Presented several talks at S.F.U. and U.B.C. (1977–1981) on microprocessors. Taught a microprocessor course at S.F.U. (1976) to undergraduates.

Training:

- HP 1000 RTE II, RTE III, RTE IV–A, RTE IV–B, RTE 6/VM; HP 3000 MPE III, MPE IV (System Manager), OpenView, High Availability, HP-UX 11.0, Inside HP-UX 11.0. DG RDOS, Assembler. IBM VM/CMS, IBM 8100 DPPX Introduction, IBM 5280 Operator. DEC Basic Plus, Basic Plus Two. Oracle 7.3 Database Administrator.

Programming Languages:

- **Very high level (compiler or metalanguage)** — ANTLR, METAL, CLOS–MOP, yacc, ML, Clean.
- **Object-oriented (compiler/interpreter)** — C++, Beta, Eiffel, Java, Object Pascal, Objective–C, Simula, Smalltalk (72, 76, 80, V, Squeak), CLOS, Max, Prograph, Python, JavaScript, Lua.

- **Medium to high level (compiler/interpreter)** — Algol 60, APL (York, VS APL, APL/CMS, APLSV), BASIC (HP 250, HP 2647, DEC Basic Plus, Basic Plus Two, Visual Basic, HP 1000, HP 3000, et cetera), BCPL, C, CLU, CSMP, Databus, Edison, Euclid, FOCAL, FORTRAN (II, IV, 4X, VI, VIII, 77, Ratfor, et cetera), GPSS, Icon (and SNOBOL4), LISP (Common Lisp, Scheme, Interlisp, et cetera), Logo, Modula, PAL III, Pascal (ISO, UCSD, HP 1000, et cetera), PL/I (and PL/M), Simscript, SPL, Tcl.
- **Low level (assembler)** — AMD 290000; Hitachi HD6301; DEC 11 (5, 10, 20, 45, 70), 8 (E, L); Data General Nova (3/D, Jumbo, MicroNova); HP 1000 (M, E, F); HP PA–RISC; IBM 1130/1800, 360/370; Intel 8080, 8085, 80x86, i860; Motorola MC6800/MC6801, MC6805, MC6809, MC14000, MC68xxx (MC68000/8/10/20/30/40/3xx), MC88000, PowerPC 6xx, DSP56xxx; RCA 1802; SDS/XDS Sigma 5; Signetics 2650; Synertek 6502; TI 9900; Western Digital Alpha Micro; Zilog Z80, Z8, Z8000; Microchip PIC, ARM (ARM7, Cortex-Mx).
- **Very low level (microprogramming)** — AMD 2900; Motorola MC10800, MC10900.

Operating systems:

- UNIX (HP 9000 HP-UX (10, 11), DEC 11, BeOS, OpenBSD, Mac OS X, Linux). IBM 370 OS/VS1, IBM VM/CMS; IBM 1800 TSX. HP 1000 RTE (M, II, III, IV–A, IV–B, 6/VM, XL); HP 3000 MPE (III, IV). Data General RDOS, DOS. DEC 11 PTOS, DOS, RT–11, RSTS/E; DEC 8 PTOS. CP/M (80, 86, 68K), MP/M–II, MSDOS, OS/2, Windows (3.1, 95, 98, NT, CE, XP). Datapoint DOS. UCSD (HP 9000 Series 200/300 PAWS). Apple Mac OS (System 6.x, System 7.x, System 8.x, System 9.x), iOS (4/5/6/7/8).

Other software:

- HP Image (250, 1000, 3000), DS (250, 1000, 3000), RJE (1000), MFG (250), OM (250), NNM/OpenView (9000), AllBase (9000). Data General RJE. IBM RJE. Datapoint ARC. Apple MacApp, MPW, Xcode. Oracle RDBMS (version 6, version 7). PostgreSQL. SQLite3. Microsoft Visual FoxPro 3, Access 97, SQL Server 7. Metrowerks CodeWarrior. Microsoft Visual C++. Borland CodeBuilder, Developer Studio, RAD Studio. Rowley Associates CrossWorks for ARM.

Professional associations:

- iOS Developer Program; Mac Developer Program. SGI Developer Program. HP Developer Program.
- Member of VanLisp, the Vancouver Lisp users group (2005–present).
- Whisper[s] Project (2002–present). Artist residency at V2 Lab, Rotterdam (2003).
- Local Groups Editor for Computer Graphics (1993).
- Editor of the Graphics Interface ’92 and Graphics Interface ’93 Conference Proceedings.
- Member of the Executive of the Vancouver local SIGGRAPH chapter (1989–1993). Editor of the Vancouver local SIGGRAPH Newsletter, “Computer Vistas” (1989–1993).
- Member of the Computer Graphics Pioneers.
- Invited speaker at the 1980 National Computer Conference, Personal Computing Festival in the advanced data base seminar section. The title of my presentation was “CORTEX: A message–based information system for personal networks.” CORTEX has since been renamed to **Reticula**.
- Presented a paper at the 1976 Canadian Computer Conference, Session ’76, entitled “Enhancing the Graphic Capabilities of a Storage Scope using Microprocessors.” The system described in the paper involved two tightly coupled Motorola MC6800 microprocessors.

Patents:

- Jaffe, N. and Crisologo, J., Sensing ignition by voltage monitoring, U.S. Patent 8,393,201, March 2013.
- Duncombe, C., Jaffe, N. and Swain, N. M., Method and system for access to automatically synchronized remote files, U.S. Patent 7,127,477, October 2006.

Publications:

- Bernardet, U., Adhia, D., Jaffe, N., Wang, J., Nixon, M., Alemi, O., Phillips, J., DiPaola, S., Pasquier, P. and Schiphorst, T. 2016. m+m: A novel Middleware for Distributed, Movement based Interactive Multimedia. MOCO '16, Proceedings of the 3rd International Symposium on Movement and Computing, Thessaloniki, Greece, Article 21. DOI=10.1145/2948910.2948942.
- Schiphorst, T., Seo, J. and Jaffe, N. 2010. Exploring touch and breath in networked wearable installation design. ACM Multimedia 2010, Proceedings of the International Conference on Multimedia, Firenze, Italy, 1399-1400. DOI=10.1145/1873951.1874225.
- Schiphorst, T., Motamedi, N. and Jaffe, N. 2007. Applying an Aesthetic Framework of Touch for Table-Top Interactions, Tabletop 2007, Second Annual IEEE International Workshop on Horizontal Interactive Homan-Computer System, Newport, Rhode Island, 71-74. DOI=10.1109/TABLETOP.2007.20.
- Schiphorst, T., Nack, F., KauwATjoe, M., de Bakker, S., Stock, Aroyo, L., Rosillio, A. P., Schut, H., and Jaffe, N. 2007. PillowTalk: can we afford intimacy?. In Proceedings of the 1st international Conference on Tangible and Embedded interaction (Baton Rouge, Louisiana, February 15 - 17, 2007). TEI '07. ACM, New York, NY, 23-30. DOI= http://doi.acm.org/10.1145/1226969.1226975.
- Jaffe, N., Wearing Lisp: A Journey Towards Wearable Intelligent Systems, LispVan, April 2006, http://bc.tech.coop/blog/060421.html.
- Schiphorst, T., Lovell, R., and Jaffe, N. 2002. Using a gestural interface toolkit for tactile input to a dynamic virtual space. In CHI '02 Extended Abstracts on Human Factors in Computing Systems (Minneapolis, Minnesota, USA, April 20 - 25, 2002). CHI '02. ACM, New York, NY, 754-755. DOI= http://doi.acm.org/10.1145/506443.506581.

Education:

Simon Fraser University (1974–1977), graduated with B.Sc, double major in Computer Science and Mathematics

University of Washington (1971–1973)

References:

- Available upon request.