Paul Crawford: *Curriculum Vitae* (2024)

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Telephone Numbers	: +592 690-5429 {Mobile (& WhatsApp)}
Nationality	: Citizen of Guyana
Languages	: English {native}; Creole (Gy) {passable}; Español {very little}
Marital Status	: Single
Work permits	: N/A for local or outsourced (No relocation)

OBJECTIVE:

Software Developer, Lecturer/Tutor or Skills Trainer in Computer Science (CS) or Information Technology (IT), especially in (but not limited to) the fields of education, healthcare, infrastructure, multimedia, renewable energy, science or telecommunications.

EXPERIENCE:

May 2005–Current	‹**Independent**› / **Nyanza Software**	*Georgetown, Guyana*
	<nyanzasoftware.com>	
	Owner (Sole Proprietor); Software Developer & Consultant; Contractual Educator	
	(Varied income; invoicing in normal range {for contractual projects / training})	

Shift-Based Full-Time Security (May 2024–Current):

- Set & unset the building's alarm system. Managed the compound's main gate. Maintained several detailed logs, covering activities & events such as: entry / exit of staff & all vehicles; handing over of duties to other guards, with comprehensive inventory listings; staff & guest usage of facilities such as the swimming pool; etc.

Independent Projects 'B' (Jan 2012–Current):

- Developed an Apple macOS / OS X utility to elegantly assist with Desktop tasks (remembering recently-*closed* folders, managing desktop sets, and overlaying icons with visual 'stamps'), for distribution soon via online outlets including the Mac App Store, and now in the final stages (help files, online support, etc.). Created from the ground up all source code (apart from some official samples), and all graphics (apart from a few public image elements). Incorporated major technologies such as intuitive User Interface design, robust Event/Run Loop dispatching, responsive Concurrency & Threading techniques, and rigorous App Sandboxing security under supporting OS versions.

  [Apple Objective-C & Cocoa API. (*Mac OS X / macOS 10.6 and later*; Apple Macintosh.)]

- Devoted over a year (including most of 2012) to research and plotting for, and then worked occasionally but steadily on writing various portions of, a forthcoming novel blending history & science-fiction, including Computer Science themes.

Contractual & Voluntary Part-Time Teaching 'A' (Sep 2017–Apr 2020 {CoViD Pandemic}):

- Guided weekly Saturday coding-camp (rapid-training) sessions in software development (Mobile, Web & Desktop / Gaming), initially under the auspices of the Guyana Ministry of Public Telecommunications' Digital Communities Initiative (DGI) until Sep 2018 and subsequently as a personal

volunteer, on the following platforms: Mobile {Android} (completed); Web Front- & Back-End {Cross-Platform} (partially completed); Desktop {Windows} (partially completed); and Gaming {Windows} [as mentor only] (partially completed).

[XML & Java. (*Android 5.x and later*; Various 'Smart' Phones.)]
[HTML, CSS, JavaScript, +. (*Windows 7, 8.x & 10*; Intel Desktops & Laptops.)]
[Visual C#, *.NET ‹Core›, WinForms, Unity, +. (*Windows 7 & 10*; Intel Desktops & Laptops.)]

Contractual {Effectively Voluntary} Part-Time Teaching 'D' (Nov 2019–Mar 2020 {CoViD Pandemic}):

• Served for various periods as a substitute teacher for Information Technology, English 'A' & 'B' and Social Studies, and as a full teacher for (Caribbean) History, at Brickdam Secondary School.

Contractual Part-Time Teaching 'B' (Aug 2018–Jan 2019):

• Trained a small group of students three afternoons each week in software development (Web & Desktop), for the BrainStreet firm, on the following platforms: Web / ASP.NET (then-current); and, Desktop / .NET [Core] (then-current).

[Visual C#, *.NET ‹Core›, WinForms, +. (*Windows 7 & 10*; Intel Desktops & Laptops.)]

Contractual Part-Time Teaching 'C' (Sep 2018–Dec 2018):

• Prepared and gave tutorials & laboratories — and designed and marked a final lab project — in one Computer Science course (so far), to third-year undergraduates, at the University of Guyana (Turkeyen campus).

[xAMP‹P› Stack {Apache-&-PHP, SQL, +}. (*Windows 10*; Intel Desktops & Laptops.)]

Contractual Projects (Mar 2006–Dec 2011):

• Engaged in long-distance outsourced continuous contracts with a former US employer, Mobius Management Systems (please refer to the 'Oct 1995–Jun 2000' entry below) {that was formally acquired in July 2007 by the Allen Systems Group, later renamed to ASG Technologies, which was itself then acquired by Rocket Software (<rocketsoftware.com>)}, via a broadband connection to their corporate network. Project tasks were somewhat similar to those described there (Total Content Management / Enterprise Report Management, and Technical Support, Services & Documentation), although this time on the LAN platform only, and included the following:-

  ‣ Enhanced the LAN server's archival subsystem to support archiving and indexing XML/XSL data, for firms in the Health Care sector.

    [MS Visual C++. (*Windows XP*; Intel Desktop.)]

  ‣ Modernised the LAN side of our archives' proprietary cross-platform internal format known as *Tagged Data Structure* (TDS), in conjunction with a developer on the mainframe side, to enable enhanced compression and encryption; and, incorporated archival support for this new TDS version (along with backward compatibility for retrieval) into all of the separate modules that process various data types (AFP, Xerox, PDF, XML, Image, Text, etc.).

    [MS Visual C++. (*Windows XP*; Intel Desktop.)]

‣ Developed and implemented robust, efficient algorithms for processing AFP data containing nested Group *Tag Logical Element* (TLE) fields used in multi-level indexing.

   [MS Visual C++. (*Windows XP*; Intel Desktop.)]

‣ Ported the respective modernised TDS layers of the LAN archival & retrieval subsystems (from C) to Java, enhancing stability in the Web viewing client and facilitating future Web-driven archiving.

   [Java. (*Windows XP*; Intel Desktop.)]

‣ Maintained & enhanced our Document Technology group's extensive internal QA system known as LPFDCOMP, while also resolving major LPFD-related & other incidents.

   [MS Visual C++; Java; Access/SQL. (*Windows XP / Server 2K3, 2K8*; Intel Desktop.)]
   [Bash Shell; Java. (*Solaris Unix*; Intel Server.)]

Independent Projects 'A' (May 2005–Feb 2006):

• Recovered after a very difficult four-months period of hurdles in the departure of my pets & myself from South Africa. Formally registered 'Nyanza Software' as a Proprietorship (please refer to the 'Aug 2000–Apr 2002' entry below). Resumed maintenance of my freeware programs, and brief development of the "Smart Assistant" program.

   [Metrowerks CodeWarrior Development Studio C++; Java; Apple Objective-C; MCL Lisp; HTML / XML / PHP. (*Mac OS 9.x / X 10.x+*; Apple Macintosh.)]

May 2002–Dec 2004 **University of the Witwatersrand**   *Johannesburg, RSA*
                             <wits.ac.za>
                             Senior Tutor (Junior Lecturer), Computer Science (Salary in normal range)

Academic Duties:

• Prepared and gave lectures, tutorials and laboratories — and designed and marked assignments and other assessments (including final examinations) — in Computer Science courses, to first-, second- and third-year undergraduate students, with some assistance from colleagues and Honours-year students (particularly in tutorial and laboratory sessions).

   [PLT (Dr.) Scheme; GNU/gcc C++; Java; Bash Shell. (*Red Hat Linux 6.x–7.x, Windows 2K / XP*; Intel Desktop.)].

   The courses were as follows:-

‣ *Data Structures & Algorithms (DSA / COMS281); 2002 (Term 2), 2003 (Term 2)*. Second-year service course (for Information & Electrical Engineers), in standard data structures (arrays, linked-lists, trees, etc.) and related algorithms (searching, sorting, etc.).

   [GNU/gcc C++; Java; Bash Shell. (*Red Hat Linux 6.x–7.x, Windows 2K / XP*; Intel Desktop.)]

‣ *"Basics" (Then uncredited, now COMS104x); 2003 (Term 1 & portion of Term 2)*. First-year support course, in the fundamentals of modern computer components and the Scheme programming language, including the emulation of encapsulated objects via pairs & lambdas.

   [PLT (Dr.) Scheme; Bash Shell. (*Red Hat Linux 6.x–7.x*; Intel Desktop.)]

‣ *Basic Computer Organisation (BCO / COMS100A); 2003 (Term 1), 2004 (Term 1)*. First-year course in digital logic, finite automata and computer logic units, including Assembler emulation via an abstract "Stack Machine" with ALU, RAM, etc.

   [PLT (Dr.) Scheme; Bash Shell. (*Red Hat Linux 6.x–7.x*; Intel Desktop.)]

‣ *Data and Data Structures (DDS / COMS100B); 2004 (Term 2)*. First-year course in information representation (character encodings & number systems), standard data structures (queues, stacks, etc.), and related algorithms (naive vs. faster sorting, etc.).

   [PLT (Dr.) Scheme; Bash Shell. (*Red Hat Linux 6.x–7.x*; Intel Desktop.)]

‣ *Algorithms & Artificial Intelligence (COMS300A / AAI); 2003 (Term 2), 2004 (Term 2)*. Third-year course in advanced algorithms (linear-time sorting, red-black/ABL tree operations, etc.), and an introductory survey of Artificial Intelligence (AI) concepts & practice.

   [GNU/gcc C++; Java; Bash Shell. (*Red Hat Linux 6.x–7.x*; Intel Desktop.)]

Administrative Duties:

• Participated in the Teaching and Learning Committee (of the Faculty of Science), including attending the bimonthly meetings to receive input (and provide feedback) on best practices.

Research Efforts:

• Made occasional (but largely unsuccessful) efforts to continue my long-lapsed research (from my graduate-student days at the University of Chicago), towards the goal of a research paper in AI for publication.

• Assisted in offering research topics for Honours-year students, and assessing Honours-year research papers.

Aug 2000–Apr 2002 **‹Independent› / Nyanza Software** *Georgetown, Guyana*
<nyanzasoftware.com>
Owner (Informal); Software Developer (No formal income)

• Established a semi-official website, listed above. Developed a couple of freeware utilities (one to perform the Desktop task of remembering recently-*closed* folders, and the other to facilitate Internet modem scripting) entirely from scratch, as my contributions to the Apple enthusiast community, and published them on that website. Worked on the initial design & implementation of a new potentially cross-platform "Smart Assistant" program. Planned to eventually incorporate e-commerce facilities, and also offer fee-based or shareware software.

[Metrowerks Codewarrior Pro C++ & Java; MCL Lisp; HTML. (*Mac OS 8.x / 9.x / X 10.x+*; Apple Macintosh.)]

• Made preliminary investigations into joint ventures in Guyana's young IT sector.

[Various. (*Windows 2K / XP*; Intel Desktop.)]

Oct 1995–Jun 2000   **Mobius Management Systems, Inc.**   *Rye, NY, USA*
                                  (*Acquired in July 2007 by **ASG [Tech]** → **Rocket Software**:*) <rocketsoftware.com>
                                  (Formerly: <mobius.com>)
                                  Software Engineer   (Salary in normal range)

Electronic Document Warehousing (EDW) and Enterprise Report Management (ERM):

Overview:- Assisted in developing and maintaining mainframe batch & server and LAN client/server systems for archiving, indexing, distributing and viewing enterprise data (reports, invoices, cheques, statements), particularly those in *Laser Printer Formatted Document* (LPFD) formats such as IBM *Advanced Function Presentation* (AFP) and Xerox *Metacode*, later doing my best to manage a small group of three developers to facilitate project completions. [These systems enable efficient transformation, from paper/microfiche storage and manual viewing, to robust disk/tape storage on servers and fast electronic viewing & searching on clients (either Web browsers or a proprietary stand-alone Viewer).] Assisted in correcting Year-2000 (Y2K) issues. Resolved several major Technical Support incidents, assisted in improving source code management, and developed QA tests.

[SAS C/C++; IBM Cobol, High-Level Assembler. (*OS/390, MVS, TSO*; IBM Mainframe.)]
[MS Visual C++; Borland C/C++, Delphi. (*Windows 3.x / 9x / NT*; Intel Desktop.)]

• Enhanced several major mainframe batch & server subsystems (such as Image Archiving and Report Archiving/Indexing) to allow processing a wider variety of images and other data, to improve performance by incorporating robust error-handling, and to facilitate code maintenance by converting legacy routines to C/C++. Developed an on-demand batch system for replicating document archives from mainframe servers to LAN servers, to enable improved client access over TCP/IP networks. Assisted in developing a specialised customer-data archival and retrieval system for a major U.S. telecommunications company, enhancing the quality of its customer service.

[SAS C/C++; IBM Cobol, High-Level Assembler. (*OS/390, MVS, TSO*; IBM Mainframe.)]

• Enhanced the LAN server's Packet Production subsystem, to allow custom reprinting and redistribution of archived documents in the IBM AFP format.

[MS Visual C++; Borland Delphi. (*Windows 95 / NT*; Intel Desktop.)]

• Enhanced the LAN client's LPFD Viewing subsystem, to support certain major IBM AFP features such as Constant Forms. Assisted in enhancing this subsystem to support other major IBM AFP features such as Outline Fonts and *Double Byte Character Set* (DBCS) Fonts, as well as major Xerox Metacode features such as colour images, co-ordinating the efforts of three developers (including self) to ensure timely deliveries.

[MS Visual C++; Borland C/C++. (*Windows 95 / NT*; Intel Desktop.)]

Year-2000 (Y2K) Issues:

- Assisted in correcting various internal and external date representations (e.g., for archive version stamps) and date calculations (e.g., for archive migration schedules) in all mainframe batch & server subsystems, to accommodate four-digit years.

  [SAS C/C++; IBM Cobol, High-Level Assembler. (*OS/390, MVS, TSO*; IBM Mainframe.)]

Technical Support, Services & Documentation:

- Resolved several major incidents related to LPFD data and other issues, often involving sensitive or key customers in the banking & telecommunications sectors. Maintained server-side and client-side source code, and fixed problems when they were reported via external customer incidents or internal QA testing.

  [SAS C/C++; IBM Cobol. (*OS/390, MVS, TSO*; IBM Mainframe.)]
  [MS Visual C++; Borland C/C++; Access/SQL. (*Windows 95 / NT*; Intel Desktop.)]

- Assisted in the migration of all mainframe source code to our corporate LAN and in the subsequent resolving of product-build issues, thus facilitating code sharing and reuse across multiple platforms, and bringing all sources (mainframe and workstation) under a single modern Version Control System (VCS).

  [SAS C/C++; IBM Cobol, High-Level Assembler. (*MVS*; IBM Mainframe.)]
  [In-house VCS. (*Windows 95*; Intel Desktop.)]

- Installed a third-party LAN FTP server, and developed & documented QA tests for archiving & replication.

  [JCL. (*MVS*; IBM Mainframe.)]
  [TCP/IP stacks; MS Word. (*Windows 3.1*; Intel Desktop.)]

Apr 1994–Sep 1995   **Zyware Systems, Inc.**   *New York, NY, USA*
                                    (Now closed)
                                    Computer Programmer (Salary in normal range)

Vertical Industry:

- Assisted in developing and maintaining a map-based client/server system to obtain paths and distances between home and work addresses, for insurance purposes.

- Developed modern RPC DLLs for efficient LAN communication.

- Developed alternative FTP DLLs for sending requests to servers, and maintained server watcher applets for detecting and processing such requests.

[MS Visual C++, Visual Basic, Access/Jet/SQL. (*Windows 3.x / 95 [beta] / NT*; (Intel Desktop.)]

Internet/Web:

- Developed CGI applets and HTML templates for interfacing server-side maps & path-finding services to Web browsers.

[MS Visual Basic, Visual C++, Access/Jet; HTML / CGI. (*Windows 3.x / 95 [beta];* Intel Desktop.)]

Business Travelling, Databases and Multimedia:

- Maintained visual map guides to U.S. cities, including hotel-booking and advertising services.

- Developed a central application providing animation & help balloons.

- Maintained a server database for tracking client requests and developed local databases for storing local route-annotations & preferences.

- Developed electronic magazines incorporating QuickTime movies.

[MS Visual Basic; Macromedia Director. (*Windows 3.x / 95 [beta]*; Intel Desktop.)]

Oct 1990–Jun 1993   **Artificial Intelligence Lab, The University Of Chicago**   *Chicago, IL, USA*
(Now dissolved; the professors involved have moved to other universities, etc.)
Teaching/Research Assistant (Stipend in normal range)

Thesis Research:

- Developed the Analogical Knowledge-Based Helper (ANKH), a History Tutor system incorporating analogical Case-Based Reasoning (CBR) and displaying graphical links between historical events. Aspects included the following:- the implementation of a representation scheme and centralised database for historical events, capturing such salient data as major protagonists, start/end dates, type of event, consequences, etc.; the development of a robust retrieval engine capable of "fuzzily" matching newly input events to (a relevant subset of) those in the existing database; the testing of the system on several simplified and major examples (such as various then-recent civil wars in the former Yugoslavia).

[Macintosh Common Lisp; Symantec C/C++. (*System 6.x / 7.x*; Apple Macintosh.)]
[XLisp; GNU C/C++. (*SunOS / Solaris Unix, X-Windows*; Sun Workstation.)]

Laboratory and Course Assistance:

- Assisted with the tutoring of undergraduate students in the computer laboratory, and graded assignments, for three undergraduate CS courses covering three quarters (nine months).

- Taught undergraduate students in the classroom on very rare occasions, filling in for lecturers who needed a day off.

[Mac Common Lisp, MacScheme. (*System 6.x / 7.x*; Apple Macintosh.)]

Sep 1983–Jul 1984   **Guyana Mining Enterprises (GUYMINE)**   *Linden, Guyana*
                        <www.guymine.com>
                        Computer Programming Intern   (Unpaid work-study)

- Assisted in the maintenance of industrial applications (including the solution of matrix-manipulation problems, payroll systems, mining reports, etc.), while learning various programming languages, on an IBM 370 mainframe.

  [IBM COBOL, PL/I, FORTRAN. (*MVS*; IBM Mainframe.)]

- Developed a histogram program for generating visual bar charts (using arrays of suitable characters such as asterisks) of the national Secondary School Entrance Examination (formerly Common Entrance Examination) results, etc.

  [IBM FORTRAN. (*MVS*; IBM Mainframe.)]

EDUCATION:

January 1994   **The University Of Chicago**   *Chicago, IL, USA*
                  <uchicago.edu>
                  M.Sc. (S.M.) in Computer Science
                  [Concentration: Artificial Intelligence (AI) / Case-Based Reasoning (CBR)]

- G.P.A. ('A' = 4.0): 3.0 (Overall), 3.5 (CBR)
- AI Tutoring System (Thesis Research in CBR); Teaching/Research Assistant

[For details, and additional projects/tasks, please refer to the 'Oct 1990–Jun 1993' entry in the Experience section (listed there because that was technically 'paid work' as it came with a stipend).]

February 1990   **Brooklyn College, C.U.N.Y.**   *Brooklyn, NY, USA*
                  <brooklyn.cuny.edu>
                  B.Sc. in Computer & Information Science; Dual Major (B.A. equiv.) in Africana Studies

{Transferred from Columbia University, NYC (September 1984 - December 1986), in September 1987}

- G.P.A. [Pre-Transferral, at C.U.] ('A' = 4.0): 2.32 (Overall), 2.0 (CS)
- G.P.A. [Post-Transferral, at B.C.] ('A' = 4.0): 3.74 (Overall), 3.5 (CIS), 4.0 (AS)

- Honours: Phi Beta Kappa; Jack Wolfe Award (CIS); Daniel Mayers Award (AS); Dean's List (1988); Invitation to join the Ford Colloquium for Careers in College Teaching

- GRE General Test:- Verbal: 800 (99%r), Quantitative: 700 (81%r), Analytical: 620 (75%r)
- GRE Subject Tests:- Computer Science (CS): 700 (79%r)

July 1983   **The Bishops' High School**   *Georgetown, Guyana*
                  (*Social*: <Bishops' High School, Guyana [Facebook]>)
                  Graduation Certificate

- 3 GCE 'A' Level certificates (Mathematics, Further Mathematics, Physics)
- 8 GCE 'O' Level & CXC CSEC certificates (Biology, Chemistry, Physics, Pure Mathematics; English 'A', Geography, Mathematics, Spanish), with 2 distinctions (Physics, English 'A')

- SAT [Reasoning Test]:- Verbal: 730 (99%r), Math: 700 (97%r), TSWE: 60+ (97%r)
- SAT Achievement [Subject] Tests:- English Composition: 720 (98%r), Math Level II: 740 (80%r), Physics: 750 (92%r)

SKILLS OVERVIEW:

{NOTE: Entries in **boldface** denote active skills. Professional context unless noted as '(Personal)'.}

Areas (Categories) {1–30 years}:

Analyst / Developer Programming {30 years}	**Application Development & Support {30 years}**
Data Warehousing {10 years}	Database Management {2.5 years}
Software Engineering {10 years}	Systems Analysis {1 year}
Internet Programming {4.5 years}	Mobile Programming {0.5 year}
Teaching (Tutoring & Lecturing) {6.5 years}	

Languages {1–33 years}:

Assembler (IBM) {0.5 year}	Basic (MS Visual Basic) {2 years}
C / C++ / Objective-C / C♯ (MS Visual C++, SAS C/C++, Metrowerks CodeWarrior C/C++, Apple Objective-C, MS *.NET C♯) {33 years}	Cobol (IBM) {2 years}
Internet & Web (HTML / CGI / XML / PHP, TCP/IP / FTP) {4.5 years}	**Internet & Web (HTML) (*Personal*) {10 years}**
Java {8 years}	Lisp / Scheme (Various) {7 years}
Pascal (Borland Delphi / Apple MPW) {2 years}	Shell Scripting (Bash) {4 years}
Shell Scripting (Bash / Tcsh) (*Personal*) {10 years}	SQL (Various) {5.5 years}

Platforms {3–15.5 years; 5–39 years (*Personal*)}:

Android 5.x+ (Various 'Smart' Phones) {0.5 year}	*Linux: Red Hat 6.x–7.x* (Intel Desktop) {3 years}
***Mac OS 'Classic' / X 10.x+* (Apple Macintosh) {10 years}**	***Mac OS 'Classic' / X 10.x+* (Apple Macintosh) (*Personal*) {39 years}**
OS/390, MVS (IBM Mainframe) {4 years}	*Unix (SunOS / Solaris)* (Sun Workstation; Intel Server) {3 years}
Unix (BSD [Mac OS X / macOS]) (*Personal*) (Apple Macintosh) {10 years}	*Windows 9x / NT / 2K / XP / 7 / 8.x / 10* (Intel Desktop) {15.5 years}
Windows Server 2K3, 2K8 (Intel Desktop) {5 years}	

Topics (Education) {1–3 years}:

Algorithms {3 years}	Artificial Intelligence {1 year}
Automata Theory {1 year}	Computer Organisation {1 year}
Data Structures {2 years}	Digital Logic {1 year}
Software Development & Engineering {1 year}	Mobile Development {0.5 year}
Web Front-/Back-End Development {1.5 years}	Desktop+Web (MS *.NET) Development {0.5 year}

General Quantitative:

Coding Camp (Rapid Training) {2.5 years}	Committee / Team Involvement {12 years}
Computer Science (Teaching) {3.5 years}	**Information Technology {30 years}**
Project Management {2 years}	Support {6 years}
Systems Analysis {1 year}	

General Qualitative:

Ability to deal with change {Good}	Ability to involve others in projects {Good}
Ability to work in a team {Excellent}	Communication skills {Very Good}
Conflict resolution {Good}	**Decision making skills {Very Good}**
Independence (Working alone) {Excellent}	Leadership qualities {Average}
Listening skills {Excellent}	Management & delegating skills {Average}
Motivational skills (Others) {Good}	**Motivational skills (Self) {Excellent}**
Reporting skills {Very Good}	Stress management (Others) {Good}
Stress management (Self) {Average}	

SKILLS DETAILS:

{NOTE: Entries in **boldface** denote active skills. Professional context unless noted as '(Personal)'.}

	Level (10 = Max)	Experience	Last Used
IT Quantitative:			
Analysis:			
• **Analyst / Developer Programming**	**9**	**30 years**	**Current**
• Data Warehousing	7	10 years	11 years ago
• Database Design & Rationalisation	6	2 years	27 years ago
• Software Engineering	8	10 years	11 years ago

• Systems Analysis	5	1 year	27 years ago

Languages:

• Assembler (IBM)	3	0.5 year	25 years ago
• Basic (MS Visual Basic)	6	2 years	27 years ago
• **C (All, EXCEPT Objective-C {*see below*})**	**9**	**33 years**	**Current**
• C++ (All, incl. MS Visual C++)	8	14 years	11 years ago
• C♯ (MS *.NET)	6	0.5 years	4 years ago
• COBOL	7	2 years	25 years ago
• Fortran (IBM)	6	0.5 year	32 years ago
• Internet & Web: CGI / PHP	7	4.5 years	6 years ago
• Internet & Web: HTML / XML	7	4 years	16 years ago
• **Internet & Web: HTML (*Personal*)**	**7**	**10 years**	**Current**
• Lisp / Scheme (All)	8	7 years	18 years ago
• Java	7	8 years	3 years ago
• **Objective-C (Apple)**	**8**	**10 years**	**Current**
• Pascal / Delphi (All)	7	2 years	23 years ago
• Shell Scripting: Bash	7	4 years	11 years ago
• **Shell Scripting: Bash / Tcsh (*Personal*)**	**7**	**9 years**	**Current**
• SQL	6	5.5 years	4 years ago
• **Swift (Apple)**	**5**	**1.5 years**	**Current**

Databases:

• Access / Jet-Engine / ODBC (MS)	7	5 years	11 years ago
• SQL (All)	6	5.5 years	4 years ago
• VSAM (IBM)	5	2 years	25 years ago

Networking:

• Internet (TCP/IP / FTP)	7	4 years	25 years ago
• Novell (ODI / IPX/SPX)	5	2 years	25 years ago

Platforms:

• *Android 5.x+* (Various 'Smart' Phones)	6	0.5 year	4 years ago
• *Linux: Red Hat 6.x–7.x* (Intel Desktop)	6	3 years	18 years ago
• ***Mac OS 8.5.x – X 10.x+* (Apple Macs)**	**9**	**10 years**	**Current**
• ***Mac Sys. 1.x – OS X 10.x+* (Apple Macs) (*Personal*)**	**9**	**39 years**	**Current**
• *OS/390 / MVS* (IBM Mainframe)	7	4 years	22 years ago
• *Unix (SunOS/Solaris)* (Sun/Intel Server)	6	3 years	11 years ago
• ***Unix (BSD [OS X / macOS])* (Apple Macs) (*Personal*)**	6	**10 years**	**Current**
• *Windows 3.x (& DOS)* (Intel Desktop)	6	4 years	26 years ago
• *Windows 9x* (Intel Desktop)	9	4 years	24 years ago
• *Windows NT / 2K / XP* (Intel Desktop)	9	12 years	11 years ago
• *Windows 7 / 8.x / 10* (Intel Desktop)	9	1.5 years	4 years ago
• *Win. Server NT / 2K3 / 2K8* (Intel Desktop)	7	5 years	11 years ago

Topics (Education):

• Algorithms	8	3 years	18 years ago
• Artificial Intelligence	8	1 year	18 years ago
• Automata Theory	7	1 year	18 years ago
• Computer Organisation	8	1 year	18 years ago
• Data Structures	8	2 years	18 years ago

• Digital Logic	7	1 year	18 years ago
• Software Development & Engineering	8	1 year	18 years ago
• Mobile Development	7	0.5 year	4 years ago
• Web Front-/Back-End Development	8	1.5 years	4 years ago
• Desktop+Web (MS *.NET) Development	7	0.5 year	4 years ago

General Quantitative:

• Committee / Team Involvement	8	12 years	9 years ago
• Computer Science (Teaching)	8	3.5 years	4 years ago
• Coding Camp (Rapid Training)	8	2.5 years	4 years ago
• **Information Technology**	**8**	**30 years**	**Current**
• Project Management	5	2 years	23 years ago
• Support Services	8	6 years	11 years ago
• Systems Analysis	6	1 year	27 years ago

General Qualitative:

• Ability to deal with change	Good
• Ability to involve others in projects	Good
• Ability to work in a team	Excellent
• Communication skills	Very Good
• Conflict resolution	Good
• **Decision making skills**	**Very Good**
• **Independence (Working alone)**	**Excellent**
• Leadership qualities	Average
• Listening skills	Excellent
• Management & delegating skills	Average
• Motivational skills (Others)	Good
• **Motivational skills (Self)**	**Excellent**
• Reporting skills	Very Good
• Stress management (Others)	Good
• **Stress management (Self)**	**Average**

AFFILIATIONS:

- Association of Computing Machinery (ACM)   Member, 2003+

- Apple Developer Program (ADP) [*formerly: ADC; APDA*]   Member, 1986+ (Select: 1999–2010)

- Microsoft Developer Network (MSDN)   Visual Studio Dev Essentials, 2018+;
Associate Member, 1996–2000

REFERENCES (*Professional*):

Ms. Shandrina Welcome-Lee [*Ex-Headmistress; Brickdam Secondary School*]
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RESEARCH INTERESTS:

- Autonomous Agency and Integrative Artificial Intelligence (AI) models; specifically, the fusion of modern bottom-up (sensory / neural-layering / reactive) and classical top-down (symbolic / planning / complete-modelling) approaches, for both software agents and mobile agents/robots.

- Analogical inference systems in AI, such as Case-Based Reasoning (CBR).

- Computer-Assisted Education (automated tutoring systems), and Machine Learning.

PERSONAL INTERESTS:
- World History & Philosophy, and related Global Economy / Trade.
- Africana Studies, covering Black / African Civilisations (Ancient & Modern), from those of the early Nile Valley in the north-east and Nok Cultural Complex in the west, and those of the middle-era savannah regions and later forest & coastal belts, to today's nation-states.

- Community Self-Help & study groups.

- Pets & Nature, including domestic cats.