

# Resume of Charles C. Cox

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Embedded Systems Engineer with more than 3 decades of experience developing firmware, software and hardware. Experienced with a wide range of technologies, industries, disciplines, and environments. Uniquely qualified to work on multi-disciplinary projects.

## EXPERTISE

<i>Systems Applications</i>	Embedded, Real-Time, Distributed, Wireless, Low Power, Reliable, Secure, Mobile Consumer, Audio, Energy, Automotive, Communications, Medical, Aerospace
<i>Languages</i>	C, C++, Assembly, Java, Python, PHP, Javascript, SQL, UML
<i>Operating Systems</i>	FreeRTOS, RTX, Nucleus, CMX, Linux, PetaLinux, µClinux, VxWorks, Windows
<i>Microcontrollers</i>	ARM, Zynq, PSoC, PIC, MSP430, SHARC, BlackFin
<i>Microprocessors</i>	Core, Pentium, PowerPC, 80x86, SPARC, StrongArm
<i>Communications</i>	USB, I <sup>2</sup> C, SPI, SAI, Ethernet, IP, RS-232/422/485, 1553B, RF, SDLC, JSON
<i>Buses</i>	PXI, PC-104, VME, STD, ISA
<i>Libraries</i>	CryptoAPI, MIRACL, RSA, MFC, STL, Boost
<i>Software Tools</i>	Eclipse, Visual Studio, Wireshark, Git, MATLAB, Enterprise Architect, EAGLE
<i>Hardware Tools</i>	JTAG, Logic Analyzers, Protocol Analyzers, Oscilloscopes, Spectrum Analyzers
<i>Compliance</i>	FDA, FAA, NASA, NSA, FCC

## PROFESSIONAL HISTORY

1/84 - present     **Consulting Embedded Systems Engineer, President**  
**SynchroSystems**, Cambridge, MA  
Helped more than 20 clients create over 40 products.  
Clients included individuals, major corporations and government agencies.  
Roles included team leader, team member and sole contributor.  
Worked with engineers and scientists from a variety of disciplines.  
Ran a small consulting firm.

### Major Projects:

Bose Corporation	Multi-channel data acquisition system
Draper Laboratory / US Air Force	Stellar navigation system
Draper Laboratory / US Air Force	Inertial navigation system
Draper Laboratory / SNC Space Systems	Fault-tolerant spacecraft flight computer
Draper Laboratory / US Navy	Portable secure software defined radio
Draper Laboratory / US Navy	Encryption module for guided ordinance
Draper Laboratory / US Air Force	UAV encryption module
Draper Laboratory / Shell Oil	Backup oil well blowout preventer
Acoustic Ideas / Clean Harbors	Ultrasonic pipeline inspection system
Bose Corporation	Automotive iPod interface
American Science & Engineering	X-ray gantry hoop motor controller
Bose Corporation	Automotive multimedia concept system
Design Continuum	Portable gas detector
Design Continuum / Insulet	Wireless insulin delivery system
David Porat / Theracycle	Therapy exercise machine
Bose Corporation	High-speed RF recorder

Bose Corporation	RDS radio receiver
David Porat	Disposable water clarity tester
Harvard Apparatus	Small animal ventilator
Harvard Clinical Technology	Syringe pump
Design Continuum	HVAC controller
Electronic Retail Systems International	Manufacturing test systems
Harvard Apparatus	Programmable syringe pump
Power Systems, Inc	Model railroad signal translator
Design Continuum	Intelligent brassiere measuring tape
AT/Comm / Maine Turnpike Authority	Electronic toll collection system
Power Systems, Inc	Model railroad controller
Millennium Information Technology	Teleradiology system
Summa Four	Phone switch cards
The Foxboro Company	pH sensor board
AllPro Products	Virtual reality headset
Bose Corporation	Sound system verifiers
Voicetek	Telephone management system
Groton Technology, Inc.	Peak purity & spectral library
Bose Corporation	2-way RF remote control
Bose Corporation	Distributed acoustic measurement system
Eaton Semiconductor Equipment	Ion implanter control system
Optimum Systems Corporation	Lighting and energy management system
Decision Software Company	Industrial Computer System
Warren E. Collins, Inc.	Respiratory testing and diagnostic system
DI/AN Controls	Movie ticket printer

9/82 - 1/84      **Control Systems Engineer**  
**WTG Energy Systems**, Norwood, MA  
 Developed firmware and hardware for wind turbine control systems.  
 Installed and tested control systems at customer sites.

3/81 - 9/82      **Assistant Engineer**  
**Global Information Systems Technology**, Champaign, IL  
 Developed hardware for a graphics terminal and EPROM programmer.

9/80 - 3/81      **Programmer**  
**C/U Business Computers**, Urbana, IL  
 Modified various business programs.

## EDUCATION

96 - present	<b>ALB Science</b> degree candidate	<b>Harvard University Extension School</b> , Cambridge, MA
78 - 81	<b>Electrical Engineering</b> major	<b>University of Illinois</b> , Champaign-Urbana, IL
77 - 78	<b>Engineering</b> major	<b>Joliet Junior College</b> , Joliet, IL