

# Christopher Paul Cole

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## CONTACT INFORMATION

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USA

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<http://coledd.com>

## OBJECTIVE

To continue running a successful consultancy, specializing in low-power microelectronic design and embedded software development targeted towards medical, military, and scientific instruments.

## SUMMARY

Excellent communication and interpersonal skills. Work well under pressure and against deadlines while taking charge of situations and delivering desired results. Valuable experience in embedded system design, including microprocessor interfacing, networking, and instrumentation.

## PROFESSIONAL EXPERIENCE

### **Cole Design and Development, LLC**, Stow, Ohio

*President*

**February 2008 – Present**

- Embedded software development for medical, military, and scientific instruments
- Embedded Linux, ported Linux to various ARM and MIPS-based platforms
- Electronic design including schematics, Spice simulation, PCB layout
- Implantable medical device microelectronics design and firmware development

### **Theken Disc, LLC**, Akron, Ohio

*Project Manager, Microelectronics*

**September 2003 – February 2008**

- Designed low power micro-electronics for artificial inter-vertebral disc implant
- Designed inductive power coupling system to charge lithium-ion battery in vivo
- Developed wireless telemetry system and protocol stack using MICS RF transceivers
- Extensive work with piezoelectric energy harvesting and efficient power conversion
- Developed real time visualization tool in C++ that enables collection of data from disc implant
- Circuit schematic design, rigid and flex circuit layout, self-hand assembled prototypes, testing

### **Accelent Systems, Inc.**, Akron, Ohio

*Senior Engineer*

**August 2000 – September 2003**

- Extensive knowledge of StrongARM, XScale, OMAP, and EP9312 ARM microprocessors
- Ported Linux, Windows CE (PPC2003 and .NET), and boot loader to various ARM platforms
- Wrote device drivers for Ethernet, serial, USB, LCD, touch, SPI, I2C, IDE, camera, audio
- Developed Radio Interface Layer for GSM/GPRS and CDMA phone modules
- Developed embedded Linux operating system distribution, 'Accelent Linux'
- Maintained Linux server for development group (NFS, SMB, NIS, DHCP, TFTP, CVS)

### **Globetek, Inc.**, Akron, Ohio

*Electrical Engineer*

**October 1999 – August 2000**

- Designed Internet-enabled data acquisition modules using Microchip PIC and CS8900
- Developed TCP/IP stack for embedded microcontrollers with web server and DHCP
- Developed minimal Linux distribution suitable for firewall and router applications
- Assisted in maintaining multi-port serial interface adapter (PCI and ISA) product line
- Maintained company server running Linux, as well as corporate LAN

### **Pile Dynamics, Inc.**, Cleveland, Ohio

*Electrical Engineer*

**August 1997 – October 1999**

- Designed PDI SmartSensors(TM) using Microchip PIC microcontrollers
- Embedded C/C++/ASM programming using Crosscode / SingleStep by SDS for 68332 micro
- Developed RS-485 networked sensors using Intel 8051 and Microchip PIC microcontrollers
- Data acquisition using pressure transducers, strain gages, accelerometers, encoders, acoustics
- Traveled to various installation sites worldwide to provide technical support for clients

**Lynk Media, LLC**, Akron, Ohio

*Systems Engineer*

**August 1996 – August 1997**

- Designed and implemented computer networks with Cisco routing equipment and Sun Servers
- Assisted in developing a web-based, net-centric scripting language, PariServ, written in Java
- Developed WANs for several clients in conjunction with Ameritech
- Programmed SQL database applications using Java/JDBC
- Wrote automated billing and Internet commerce software in Java using CyberCash services

**Polymer Science Dept., The University of Akron**, Akron, Ohio

**Biomedical Engineering Dept., The University of Akron**, Akron, Ohio

*Unix Administrator*

**August 1992 – August 1996**

- Supervised a network of Silicon Graphics and Sun Workstations used for molecular modeling
- Extensive experience in Solaris, SunOS, IRIX, and Linux
- Managed laser printers, line printers, and wax-transfer printers
- Sourcing for networking and computing software and hardware
- Created and maintained a public FTP and World Wide Web server on the Internet

PATENTS

US Patent Application Number [20050273170](#), Prosthetic intervertebral spinal disc with integral microprocessor, R. Navarro, C. Cole, R. Theken, June 8, 2004.

PUBLICATIONS

Christopher P. Cole and Richard R. Navarro. [eDisc - The First Artificial Spinal Disc with Integral Force-Sensing Microelectronics](#), *BioMed-2007: 2nd Frontiers in Biomedical Devices Conference*, Irvine, CA., June 7-8, 2007.

James P. Price, Brian E. Rich, Christopher P. Cole, and Richard R. Navarro. [Characteristic Motion Signatures Derived from the Theken eDisc under Multi-Axial Loading](#), *BioMed-2007: 2nd Frontiers in Biomedical Devices Conference*, Irvine, CA., June 7-8, 2007.

G. Likins, G. Piscalko, and C. Cole. [Pile Installation Recorder Tests for ACIP/CFA Piles](#), *Deep Foundations Institute*, Houston, TX, 1998, article #236, publication #28.

EDUCATION

**The University of Akron**, Akron, Ohio

Bachelor of Science in Electrical Engineering, May 1997

*Electives include:* Microprocessor interfacing, Electromagnetics I and II, Antenna Design, Electronic Design, Active Circuits, Analog Communication, Digital Communication

OTHER  
EXPERIENCE

- Developed a 16-bit CPU core and peripherals in VHDL, including an assembler and tools
- Wrote a TCP/IP stack for the PIC 16F877 using SMC91C111 Ethernet controller
- Extensive knowledge of assembly language for ARM, x86, MIPS, 6502, PIC, MSP430
- Authored a contact management database application with PHP and MySQL
- Developed several projects that implemented the Basic Stamp embedded microcontroller
- Amateur Radio enthusiast, Extra Class, KB8KWM

SKILLS

- *Operating Systems:* Linux, Solaris, Windows 98/2000/XP/Vista
- *Proficient languages:* ASM, C, C++, HTML, Java, PHP, Shell scripting, SQL, VHDL
- *Familiar languages:* L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>, Perl, Python, Verilog

AFFILIATIONS

- Institute of Electrical and Electronic Engineers (IEEE) Member
- Association for the Advancement of Medical Instrumentation (AAMI) Member
- American Radio Relay League (ARRL) Member
- Founded Akron Linux Users Group (ALUG) in 1995
- National Association of Investors Corporation (NAIC) Member
- Cascade Investment Club, Treasurer
- Akron Digital Group Member
- Academy of Model Aeronautics (AMA) Member