Charles Lidstone

568 Bathurst Street ▪ Toronto, ON • M5S 2P9 • 416- 413-1989 • charles.lidstone@utoronto.ca

EDUCATION SUMMARY

M.A.Sc. Electrical Engineering, Systems Control Group
University of Toronto 1999 – 2003

B.A.Sc. Engineering Science, Electrical Engineering Option
University of Toronto 1992 – 1997

EMPLOYMENT

2008 contract **Home Electronics – *PCB Layout Engineer***

- PCB Layout of SMT boards for medical instruments; from parts placement to completed boards
- Design new library symbols and packages
- Edit schematics

2007 contract **Phenostream: Behavioural Based Robotics – *Consulting Engineer***

- Solve manufacturability problems in the assembly of motor control and position sensing circuit on Smart Motor Modules
- Robot design for example projects based on Phenostream's robot construction system
- Develop end user documentation for Phenostream parts and designs

2005 contract **Empower Technologies / Texas Instruments - *Technical Editor (LDK5910, a development platform for Texas Instruments' OMAP5910 processor)***

- Overall planning of technical manuals to ensure accuracy, usability and quality presentation; and to meet marketing subcontractor's objectives
- Organization and editing of Software Development Manuals, Hardware Design Specification, User's Guide and Quick Start Guide
- Creation of technical drawings & figures and copy writing for selected sections

1997 - 1999 **Indigo Manufacturing – *Electrical Engineer***

- Project management for audio amplifier products from inception to manufacture
- Work with customers to ensure products meet design requirements
- Analog circuit and switch mode power supply design: circuit design, component selection, schematic capture, PCB layout, board level trouble shooting, and BOM generation.
- Responsible for ensuring products meet safety and EMI approval standards
- Thermal and magnetic component design
- Work with subcontractors to source and specify custom components
- Microcontroller programming for embedded digital signal processing

1994 - 1996 **MCW Custom Energy Solutions – *Proposal Coordinator & Technical Auditor***

- Coordination of proposals and feasibility studies
- Graphic design of proposals and promotional material
- Energy use and utility auditing
- HVAC and electrical system field auditing
- Technical writing and graphic design for building operator's manuals

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ACADEMIC ACTIVITY

Thesis

The Gimballed Helicopter Testbed: Design, Build and Validation
(First step in the University of Toronto's autonomous robot helicopter project)
- Designed gimbal testbed for operational testing of a RC helicopter
- Developed 3D computer model of testbed
- Worked with fabricators and vendors to implement testbed
- Developed and implemented measurement and data acquisition system
- Performed system identification experiments on RC helicopter

Projects

MOST Microsatellite Project – State Estimation using Kalman Filter
(Microvariability & Oscillations in STars, Canada's first space science microsatellite)
- Developed MATLAB algorithm for estimating satellite attitude using measurements of Earth's magnetic field
- Simulated using telemetry and tracking data from a satellite in orbit

Spectrum Estimation Comparative Study
- Compared power spectral density estimates generated using conventional and parametric spectrum estimation methods in MATLAB

Adaptive Equalizer Comparative Study
- Compared convergence rate for adaptive filters in training and blind modes for linear and non-linear error minimizations in MATLAB

Courses

Linear Systems, Non-linear Systems, Communication Systems, Digital Communications, Robot Kinematics & Dynamics, Signal Processing, Discrete Event Systems, Stochastic Processes, Large Scale Systems

Teaching Assistantship

Lab & Tutorial Instructor - Circuit Theory, Linear Systems & Control
- Taught the use of test equipment and debugging of circuits
- Taught problem solving skills related to course material

COMPUTER SKILLS

Systems

MS DOS, MS Windows, Unix, Linux, QNX

Hardware

PC hardware and network integration, configuration and troubleshooting

Software

General
MS Office (Word, Excel, PowerPoint, Outlook) including Visual Basic for Applications, WordPerfect, Lotus 123, various office and Internet productivity applications and PC hardware diagnostic tools

CAD/CAE
MATLAB/Simulink, CadSoft Eagle PCB, PADS PowerPCB, OrCAD, IronCAD

Graphics
Adobe PhotoShop, Corel Draw and other image editing and optimization tools

Languages

C, Python, Visual Basic, Microchip & M68000 assembly language, CSS & HTML