

DIANE KOSTKA

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OBJECTIVE

To use my expertise and knowledge to promote better clinical care.

EDUCATION

M.H.Sc. in Clinical Biomedical Engineering – University of Toronto (Second Year, **GPA:3.95/4.0**)

B.A.Sc. in Electrical Engineering – University of Toronto (**GPA:3.44/4.0**)

- Specialized in Signal Processing and Digital Hardware.
- **Minor in Bioengineering** – University of Toronto

WORK EXPERIENCE

Jan. 2011 to Present – Firmware Developer, Colibri Technologies Inc., Toronto

- Develop and assist in the design of a hardware platform for data acquisition and signal processing of ultrasound data using VHDL and MFC.

Sept. 2010 to Present – Research Student, Hocoma, Toronto

- Run patient trials to study the cardiovascular response to dynamic functional electrical stimulation during head-up tilt
- Recruit eligible participants with spinal cord injury for the study

May to August 2010 – Research Developer, Intelligent Assistive Technology and Systems Lab (IATSL), Toronto

- Developed a conceptual design for a floor tile to non-invasively monitor patient physiological measurements (blood pressure, heart rate, respiration rate, and weight).
- Built a prototype design of a floor tile that continuously measures and records the user's heart rate non-intrusively.

Nov. to Dec. 2009 – Research Intern, eHealth - University Health Network, Toronto

- Interacted with nurses as a pseudo patient in a study that examined common interruptions encountered during the delivery of high-risk medicines in a hospital setting.

May 2007 to Aug. 2008 – Consulting Engineer in training, IBI Group, Toronto

- Managed the installation of a surveillance system to monitor railway trespassing at the Erindale GO Station. Responsibilities included system design, supervision, budgeting and client support.
- Worked with clients to design and install security and access control systems for buildings
- Managed Accounts Receivables on a day-to-day basis with amount in excess of \$3 million. Reviewed and generated technical documentation – project proposals, equipment specifications, installation procedures and test plans.

TECHNICAL SKILLS

- Proficient in Labview, C++, MATLAB, Assembly, VHDL and Verilog.
- Competent in UNIX, Linux, PSPICE and Windows Environments.
- Working knowledge of Quartus, MAX, Visual Basics and Pymol software.

RECENT PROJECT WORK

Evaluation and Characterisation of the Thermal Grill apparatus for SCI patients (*Master's Thesis*)

Use of LabView and Visual C++ - Developing and evaluating a thermal grill device prototype to study the mechanics of central neuropathic pain in spinal cord injury (SCI) patients. Determining the optimal spatial and temporal configurations of the grill through able-bodied subject testing.

MagnaBoot

(Sept 2009 to Dec 2009)

Designed and developed a prototype for a novel intermittent pneumatic compression boot for the treatment of lower limb ischemia in diabetic patients. Blood flow modeling was done using lumped electrical circuits to show proof of theory. *Team Size: 5*

Hardware/Software Dynamic Visualization of the EEG

(Sept 2008 to May 2009)

Use of MATLAB and HDL Coding - Designed hardware and software platforms for the simultaneous visualization of the spectral, temporal, spatial and frequency components of EEG signals. *Team Size: 2*

Mt. Sinai Hospital Case Study

(March 2009)

Determined the total time utilization and staffing necessary for hospital CT scanners, and optimum time distribution between patient groups for the Joint Department of Medical Imaging. *Team Size: 3*

Electronic Resource Management and Referral System (RM&R) Case Study

(February 2009)

Studied the potential impact and risks involved with the referral system implementation at the LHIN at both the hospital and patient level. Proposed indicators to effectively measure improvements in quality and delivery of healthcare. *Team Size: 3*

Sick Kids Hospital Case Study

(February 2009)

Developed an effective, low cost method for the monitoring and feedback of hand hygiene compliance using RFID technology. *Team Size: 3*

HONOURS AND DISTINCTIONS

- Barbara and Frank Milligan Graduate Fellowship, University of Toronto (\$3000)
- Dean's Honors' List, Faculty of Applied Science & Engineering, University of Toronto
- Co-Curricular Leadership Certificate, LOT, University of Toronto (April 2009)
- Government of India, Department of Biotechnology Scholarship (top 25 students), India, 2004
- Central Board of Secondary Education, Certificate of Merit in Biology (99%), Kuwait, 2004
- Association of Indian Professionals Certificate of Merit (top 25 students), Kuwait, 2004

ACTIVITIES

- **Teaching Assistant**, Systems Biology, Engineering Science Department (2009)
- **Teaching Assistant**, Saturday School Academy, University of Toronto (2008)
- **Delegate**, Ontario Model World Health Organisation (2010)
- **Director of Advertising**, University of Toronto Goan Association
- **Volunteer Journalist**, Net Change Week (2010)
- **Participant**, Toronto Wheelchair Relay Challenge (CPA Ontario)
- **Presenter** "Lab-On-Chip device for Stroke Diagnosis/Detection" CESO Conference 2009
- **Clinical Engineers Representative**, Biomedical Engineering Students' Association (2009)
- **Participant**, City Chase Toronto 2009
- **Mentor**, First Year Initiation Program, University of Toronto
- **Peer Tutor**, ENGSOC Tutoring, University of Toronto
- **Fashion Model**, Asian Women's Magazine