**KUNAL J. DOSHI**

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## CAREER OBJECTIVE

To work for a fast-paced, dynamic company where I can use my profound experience in various software languages and my sound hardware fundamentals in a developer role

## SKILLS

- Programming Language:
  - **Labview:** TCP/IP, analog and digital I/O, DAQmx, **NI Vision**, Diadem, Event structure, Functional Globals, Object-Oriented programming, Webserver
  - **Matlab**: GUI, C-MEX programming, serial communication, Simulink, Image Processing, Signal Processing, Virtual Reality, Simrobot, Robotics toolbox
  - **C, C++,** VB Script, Batch file, **NI Teststand**, LabWindows CVI
- **Microcontroller:** ATMEGA328(Arduino), MSP430, 89C51, 8086,8085
- **Hardware:** Touch screen, AVR 8 bit RSIC, 16 X 2 LCD, relay, solenoids, accelerometer, multiplexer/demultiplexer, DAC, ADC, firewire and usb3 camera, Laser Cutter, Ubisense
- **Wireless Technology:** Wi-fi, Zigbee, Bluetooth
- **Harware Protocols:** RS 232/422, SPI, I2C, TCP/IP, UDP, IEEE 1394, USB 2.0/3.0, IEEE 802.15.4
- **Design:** Eagle Cad, KiCad, ProEngineer, Virtools, 3DS MAX, Photoshop
- **Database:** MySQL, MS SQL, MS Access
- **Internet Technology:** HTML, XML, PHP, JavaScript, CSS,VRML, Sencha Touch, Wordpress

## WORK EXPERIENCE

1) **Cal-Bay Systems,** San Rafael CA                                                    **Jan 2014 - Present**
   *Test Automation Engineer*

   - Create custom Labview based software for hardware testing automation
   - Design and maintain custom TestStand scripts for automated test equipment
   - Execute final integration and deployment of full electromechanical systems
   - Program in MATLAB, C, C++ and other programming languages as required by the project

2) **Neuro-Kinetics Inc,** Pittsburgh, PA                                                **Nov 2010 – Jan 2014**
   *Research Software Engineer*

   - Create new features and bug fixes for a medical diagnostic software based on Labview
   - Single handedly architected industry's first 250 frames/sec binocular image capturing software
   - Wrote a completely automated algorithm for detecting pupil from eye image in less than 4 msec
   - Engineered a system capable of saving streaming eye images from two USB 3.0 cameras running at 250 frames/sec with real-time compression
   - Worked on 3 axis gyroscope, foot pedal, NI PCI Card, VB Script and DIADEM templates

3) **Department of Neuroscience, UMDNJ,** Newark, NJ                                     **Oct 2008 – Nov 2010**
   *Biomedical Engineer*

   - Wrote Labview programs for real time data collection, viewing and data storage
   - Worked with biosensors such as pneumotachometer, thermocouple, respiration band, solenoid, accelerometer and ECG, EMG, PPG signals, wireless pulse-oximeter (XBee, Wi-Fi)

**4) RIVERS lab, Dept. of Physiotherapy, UMDNJ**        **April 2008 – Dec 2008**
   *Research Specialist*

- Designed a virtual 3D environment in Virtools to study the role of end effectors in navigation
- Direct Input programming for haptic feedback from a force feedback joystick

## MASTER'S THESIS

**Creating New Visualization and Human Interface Devices for Therapeutic Video Games**
- Designed a 3-D graphical video game in VRML which was controlled using a modified SIMROBOT toolbox in MATLAB for training for patients with upper extremity disorder
- Programmed an interface for Flock of Birds, IMU 6 DOF and Wiimote devices with the game

## PATENTS

Method and Apparatus for Objective Ophthalmic eye testing in video-oculography applications [61/799,959 USPTO patent pending]

## PROJECT AND PART- TIME EMPLOYMENTS

- **Guest Lecturer,** *Biomedical Engineering Dept, NJIT*      **Jan 2010- May 2010**
   Studio class on microcontrollers using Arduino and hardware such as potentiometers, switch, LED, temperature sensor, 16 X 2 LCD, XBee
- **Research Assistant,** *Neuromuscular Rehabilitation Lab, NJIT*      **Jan 2007 – Dec 2007**
   Design and maintain gaming system developed for upper-extremity disorder subjects
- **Touch Screen Based Patient Monitor System**      **July 2009 – Dec 2010**
   Worked on a designing a patient monitoring system which can display ECG (any of the 12 leads), plethysmograph and respiration waveform along with body temperature on OLED touch screen
- **Digital Name Tag**      **July 2010- Jan 2011**
   Designed a digitized name tag using 16 X 32 LED Matrix Display, RTC, SD card and Arduino
- **Arduino based Temperature Monitor**      **Feb 2010**
   Designed a temperature monitor based on Atmega328 (Arduino) capable of displaying current temperature on a LCD screen and storing a history of past readings
- **Web Developer,** *Pre-College Programs, NJIT*      **Dec 2006 – Jan 2008**
- **Trainee Biomedical Engineer,** *Gurunanak Hospital, India*      **Jun 2005 - Dec 2005**

## EDUCATIONAL QUALIFICATIONS

**Master of Science, Biomedical Engineering**      **GPA: 3.94**
New Jersey Institute of Technology, Newark, NJ      Dec 2007

**Bachelor of Biomedical Engineering**      **GPA: 3.8**
University of Mumbai, India      May 2006

## CERTIFICATION

- Certified Labview Developer (CLD)      May 2013
- Certified Labview Associate Developer(CLAD)      Oct 2012

## AWARDS AND ACHIEVEMENTS

- Member of Tau Beta Pi and Alpha Epsilon Lambda Honors Society
- Provost Fellowship for excellent academic record, NJIT

## EXTRA – CURRICULAR ACTIVITIES

DIY Electronics, Techshop, Photography