

# PAURAKH RAJBHANDARY

• 126 Blackwelder Ct, #703 • Palo Alto, CA 94305 • (210)-291-8531 • [paurakh@stanford.edu](mailto:paurakh@stanford.edu)

---

## EDUCATION

---

<b>STANFORD UNIVERSITY</b> , Palo Alto, CA	Enrolled Sept 2011
MS/PhD in Electrical Engineering	Cumulative GPA 3.7
<b>TRINITY UNIVERSITY</b> , San Antonio, TX	May 2011
Bachelor of Science	Cumulative GPA 3.8
Double Major: Engineering Science (Concentration Electrical), Physics	
Minor: Mathematics	
<b>UNIVERSITY OF AUCKLAND (UOA)</b> , New Zealand	Semester Abroad, Spring 2009

---

## RESESEARCH EXPERIENCE

---

<b>Positioning of Multiple Photon Interaction Events in Cross Strip Cadmium Zinc Telluride (CZT) Detectors for PET (Dr. Craig Levin, Medical Imaging Instrumentation Laboratory, Stanford University)</b>	2011
- Developed a Bayesian algorithm to resolve photon event positioning degeneracy in a novel CZT photon detectors	
- Performed experimental test on the proposed algorithm using pencil beam collimator	
<b>Passive Reduction of Vibration Transmission in String Trimmers (Dr. Jack Leifer, Howard Hughes Medical Institute Program, Trinity University)</b>	2010
- Developed various approaches to passively reduce vibration transmission in string trimmers	
- Gained expertise in developing MATLAB routines to analyze vibration data using ISO standards	
- Established frequency response of different elastomers using PCB 2100E11 Modal Shaker	
<b>Infrared Computed Tomography for Hydrocarbon Thin Film Evaporation (Dr. Peter Kelly-Zion, Engineering Science Department, Trinity University)</b>	2009
- Implemented filtered backprojection (FBP) and simultaneous algebraic reconstruction technique (SART) algorithms in MATLAB to model spatial concentration distribution of hydrocarbon vapors	
- Optimized the FBP algorithm by evaluating effects of various filters on the empirical and the synthesized data	
<b>Photovoltaic and Wind Energy System Prototype (Dr. Gordon Mac Alpine, Physics Department, Trinity University)</b>	2009
- Worked in a directed research to install a data acquisition system for standalone photovoltaic solar and wind energy systems for energy production analysis	
- Studied energy consumption statistics in the US and researched on alternative energy systems	
<b>Quasars, active galactic nuclei (AGN), and Very Long Baseline Interferometry (VLBI) (Dr. David Hough, Physics Department, Trinity University)</b>	2008
- Completed a high-resolution radio-study project of AGN using VLBI data reduction techniques	
- Studied Magneto Hydro Dynamic (MHD) models of relativistic jets emitted by AGN and tested VLBI data for the validity of jet models	

---

## CONFERENCE PUBLICATIONS & PRESENTATIONS

---

- **Rajbhandary, P.L.**, and Leifer, J., Weems, B.J., "Measurement and Passive Reduction of Vibration Transmission in String Trimmers", Proceedings of the 29th International Modal Analysis Conference, Jacksonville, FL, 1/11.
- 

## ENGINEERING DESIGN PROJECTS

---

- Implemented 24 band carrier OFDM receiver with QPSK constellation in TI C55X DSP processor 2012
- Built Hyperspectral Image Analyzer platform to enhance contrast between different organs during surgery 2012
- Designed a four operation 16 bit calculator with VGA output using Motorola MC 68HC11 Microcontroller 2011
- Designed and simulated a 4 bit ALU using L-Edit Tools 2011
- Built power spring starter for Shindaiwa T272 string trimmer 2010
- Programmed a line tracking robot using servo motors with FPGA Altera Flex Chip in Quartus II 9.0 2010
- Implemented Virtual Instrument for TecEquipment CE 106 ball and beam control system 2009
- Simulated and implemented a traffic light FSM using FPGA Altera MAX chip in Quartus II 9.0 2009

---

## RELEVANT SKILLS/COURSES

---

### Electrical Engineering

Applied Vision and Image Systems; Digital Signal Processing; Bio-chips, Imaging & Nanomedicine; Stochastic Signal Processing; Fourier Transform & its Application; Signals and Systems, Electronics I & II; Digital Logic Design; Embedded Microcomputer Systems; Principles of Algorithm; Control Systems

### Math/Science

Optical Physics; Electromagnetic Fields; Modern Physics; Heat Transfer; Fluid Mechanics; Engineering Materials; Thermodynamics; Calculus I, II & III; Differential Equations & Linear Algebra; Partial Differential Equations; Probability and Statistics; Introduction to Mechanics; Magnetism and Waves

### Computer Skills

MATLAB; LabVIEW; C; Visual Basic; VHDL; Assembly Language; Quartus; EES; Spice; Pro-Engineer; L-Edit; HTML; Dreamweaver; Flash, Adobe Photoshop / Linux; MS-DOS; Debugging

---

## LEADERSHIP & WORK EXPERIENCE

---

**President**, Institute of Electrical and Electronics Engineers (IEEE), Trinity University Branch 08/10-08/11

- Lead IEEE branch by conducting monthly local meetings, representing in regional meetings and creating agendas for the academic year
- Organized events including SPAC lectures, recruiting events, programming competition and social events

**Intern**, FlashScan3D LLC, San Antonio Branch, TX 01/11-04/11

- Performed preliminary studies for grant proposal for Structured Light Illumination based biometric devices

**Resident Assistant**, Residential Life, Trinity University 01/10-05/11

- Managed a university residence hall floor of 54 ethnically diverse undergraduate students
- Enforced University and Residence Life rules and regulations resulting in a safe, orderly, and enjoyable living environment

**Tutor, Lab Assistant and Grader**, Engineering Science, Math and Physics Department, Trinity University 08/08-05/11

- Offered weekly help sessions to students, offered help during laboratory, and graded homework for Introduction to Physics Lab, Frontiers of Physics, Statistical Methods and Engineering Design VI: FPGA Programming

**Academic and Resident Computer Consultant**, Information Technology Services 08/07-08/10

- Installed and fixed computer and telephone related problems and offered help over phone
- Presented new software packages like Microsoft Windows 7, Leopard and anti-viruses to faculty/staff members

**High School Teacher**, Lumbini International College, Lalitpur, Nepal 09/06-7/07

- Taught classes as a full time teacher for Cambridge IGCSE Advanced-levels Biology
  - Conducted biology laboratory, exams and organized college events
- 

## HONORS & AWARDS

---

- Brion Foundation Graduate Fellowship, Stanford University 2011
  - IEEE Outstanding Senior Engineering Award, Trinity University 2011
  - Engineering Science Faculty Professional Promise Award, Trinity University 2011
  - Junior Academic Engineering Award, Trinity University 2010
  - Margaret Jean Abernethy Engineering Award, Trinity University 2009
  - Dr. Earl Dodderer Award of Excellence, Trinity University 2009
  - Dean's list of Honors Spring & Fall 2008, 2009, and 2010
  - Youth Talent Recognition Award, Nepal Academy of Science and Technology (NAST) 2006
  - Tuborg Excellence Award (Rank: 4/300,000 nationally), Gorkha Brewery Industry, Kathmandu, Nepal 2005
- 

## COMMUNITY INVOLVEMENT & INTERESTS

---

National Society of Professional Engineers; National Society of Collegiate Scholars; Trinity Engineering Society; Golden Key Honor Society; Sigma Pi Sigma, Physics Honor Society; Engineers without Borders (EWB/NZ); American Red Cross Certified Lifeguard; Photography