

Deepak Gurung

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RESEARCH INTERESTS Vision system for unmanned aerial vehicles, machine learning, sensor fusion, minimal problems in computer vision.

EDUCATION **University of Nevada Reno**
PhD in Computer Engineering **January 2015 – Present**

- *Research Areas:* Object detection and UAV localization using aerial images.
- *Relevant Coursework (Spring 2015):* Deep Learning, Statistical Machine Learning.
- *Advisor:* Prof. George Bebis

Université de Bourgogne, Burgundy, France

Masters in Computer Vision and Robotics **September 2012 – June 2015**

- *Thesis:* SOS Optimization for a special class of minimal problems in Computer Vision: an application to rotation estimation.
- *Advisor:* Dr. Adlane Habed and Dr. Nicolas Padoy (University of Strasbourg, France)

Tribhuvan University, Pulchowk Campus, Kathmandu, Nepal

Bachelors in Electronics and Communication **September 2005 – March 2010**

- *Score:* Distinction (81.2%)
- *Major Courses:* Signals and Systems, Digital Signal Processing, Control Systems, Image processing, Neural Networks, Telecommunications, Engineering Mathematics for 5 semesters.

HONOURS AND AWARDS **Project award:**
Best engineering technology design, Mondialogo Engineering Gold Award–Diamler and UNESCO €15,000 **2009**
Best Autonomous Machine Design Award in autonomous robot competition for Asian countries-ABU ROBOCON **2008**
Academic Award:
The College Fellowship Scholarship Award during Bachelor’s study **2005-2010**
15th place out of 3500 in Engineering University Admissions exam **2005**
Certificate of Excellence for Outstanding Academic Achievement, Class 12 **2004**

PUBLICATION Adhikari B., **Gurung D.**, Kunwar G.S., Gaywali P., “FPGA implementation of a Mobile Inverted Pendulum Robot”, Proceedings of 6th Korea Multimedia Society(KMMS), International Conference on Multimedia Information Technology and Applications, pp. 220 -223, 2010.

RESEARCH EXPERIENCE **University of Nevada Reno**
Research assistant at Computer Vision Lab **January 2015 – present**

- Research on vision system for UAV localization and object detection in aerial images.

University of Strasbourg, Strasbourg, France

Research intern at ICube–Control, Vision and Robotics Lab **February 2014 – July 2014**

- Worked on developing global method for minimal problems in computer vision based on Sum-of-Squares (SOS) optimization.
- Formulated camera transformation problem into SOS polynomial problem and solved via convex optimization methods.
- Implemented the solution for rotation estimation in PTZ camera.

Université de Bourgogne, LeCreusot, France

Research intern at Le2i-Computer Vision Lab

June 2013 – September 2013

- Worked on mapping asynchronously acquired RGB images onto Depth images of RGB-D cameras including Kinect.
- Researched on improving RGB-D mapping for fast moving cameras.

PROJECTS

Université de Bourgogne, LeCreusot, France

Academic group project (2 persons). All Projects are done in C++.

- Robust Principal Component Analysis based on Least Median of Squares. (Semester 1)
- Structure from Motion. (Semester 2)
- Hand Gesture recognition. (Semester 2)
- Robust Tracking using Learned Linear Subspace. (Semester 3)
- Navigation of Turtlebots in a maze. (Semester 3)

Tribhuvan University, Pulchowk Campus, Nepal

Team member in ABU ROBOCON – India 2008 and Japan 2009

May 2008 – August 2009

- Worked on building autonomous wheeled robots for two ABU ROBOCON robotics competitions.
- Implemented path planning algorithms for structured environment and sensor fusion algorithms for fusing data from sensors like optical, wheel odometry and inertial sensors.

TEACHING
EXPERIENCE

University of Nevada, Reno

Teaching Assistant

January 2015 – present

Teaching assistant for CS 135 - Introduction to Computer Science I.

Tribhuvan University, Kathmandu, Nepal

Teaching Assistant

April 2010 – June 2012

Teaching assistant for undergraduate courses in electrical engineering, including signals and systems, digital logic and basic electronics engineering. Examination invigilator for undergraduate courses.

Technical Instructor

September 2010 – February 2011

Conducting theory and laboratory of “Digital Electronics” for Biomedical Equipment Technician training program, organized by Nick Simons Institute in collaboration with Pulchowk Campus and National Health Care Training Centre.

SOFTWARE
SKILLS

Programming: C, C++ (comfortable), Matlab(proficient), Lua(Intermediate), 80x86 assembly language(past experience).

Packages and library used regularly: ROS, OpenCV, OpenGL, PCL.

Other: VHDL coding.

HARDWARE
SKILLS

Embedded Systems: FPGA, PIC and Atmega microcontroller usage and interface design.

LANGUAGE

English (Fluent), Nepali (Native), French (Beginner).

REFEREES

George Bebis

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CVL Lab, CSE department
University of Nevada, Reno
Reno, USA
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