

# LONG T. LUU

## CONTACT INFORMATION

Local address:  
4640 Spruce Street,  
Philadelphia, PA, 19139  
Email: longluu@sas.upenn.edu

Permanent address:  
32 Gilbert Drive,  
Chelsea, ME, 04330  
Phone: 207-458-2995

## EDUCATION

- **Phd of Psychology**, September 2013 - May 2018 (expected)  
University of Pennsylvania
- **Bachelor of Electrical Engineering**, September 2009 - May 2011  
The Catholic University of America  
GPA: 3.85/4.00 (Magna Cum Laude)  
Senior Project: Interpolation and its application in Digital Image Correlation
- **Electrical and Electronic Department**, September 2006 - May 2009  
International University, Vietnam National University, Ho Chi Minh City.

## RELEVANT COURSEWORK

Communication systems  
Mathematical Analysis for Graduate Students  
Analog and digital signal processing  
Introduction to Finite Element Method  
Computer Architecture and Assembly Language

Computational Methods for Graduate Students  
Random Signal Theory  
Principles of Computational Neuroscience  
(audit)

## HONORS AND AWARDS

- Benjamin Franklin Fellowship, University of Pennsylvania
- The George McDuffie Award for Excellence in Electrical Engineering.
- Tau Beta Pi honor society.
- Dean's list: 2009 - 2011.

## RESEARCH EXPERIENCE

- *August 2012 - May 2013: Laboratory for Computational Cognitive Neuroscience, Georgetown University*
  - Work on EEG signal processing, data analysis and its correlation to behavioral measures in attentional blink paradigm.
  - Design and implement in Matlab behavioral experiments involving the human neural tuning to binocular disparity as well as human consciousness and attention in dual tasks.
- *May 2011 - March 2012 : Biophotonics Laboratory, Catholic University of America (CUA) & Wilmer Ophthalmological Institute, Johns Hopkins University*
  - Develop a highly interactive image processing software written in Matlab to analyze the oxygen saturation level of the retina.

- Work on the comparison of different techniques (Laser speckle and Radon transform) in measuring the blood flow velocity in vitro.
  - Investigate and develop low-cost fabrication methods of microfluidic devices in biomedical applications.
- *June 2010 - May 2011: Computer Vision and High Resolution Imaging for Experimental Mechanics Laboratory, CUA*
  - Work on mathematical derivation and implementation in C++ of various B-spline interpolation algorithms and its modified versions using digital filter approach.
  - Develop a reliable testing scheme to assess the accuracy of interpolation methods in Digital Image Correlation technique.
- *February 2010 - June 2010: Robotics and Intelligent Control Laboratory, CUA*  
Be in charge of hardware implementation of an innovative project on commercial low-cost and high-efficiency security camera.
- *October 2009 - February 2010: Electromagnetic Wave Propagation and Remote Sensing Laboratory, CUA*  
Work on applications of Computational-Intelligence-based optimization algorithms (Particle Swarm Optimization, Artificial Immune System, etc.) to antenna and electromagnetic problems as to achieving the desired radiation patterns.

## SKILLS

- Programming language:
  - Working knowledge: Matlab, C/C++, Gcode (for Thing-O-Matic 3-D printer).
  - Basic knowledge: Assembly Language (IA-32, MIPS), VHDL, Verilog.
- Hardware: Thing-O-Matic 3-D printer, Makerbot Industry.
- Language proficiency: English, Vietnamese (native).

## ACTIVITIES

- Vietnamese Student Association, Vice President, 2009 - 2011.
- Volunteer in The LEGO Robotics Tournament at Smithsonian's Ripley Center, November 2010.
- Volunteer in The Global Fest held at CUA 2010 and 2011 to introduce Vietnamese culture.
- Tutor on Calculus, Statics and University Physics at Catholic University of America, Spring 2011.

## PUBLICATION

### Journal papers

- (1) Long Luu, Patrick A. Roman, Scott A. Mathews, Jessica C. Ramella-Roman, "Microfluidics based phantoms of superficial vascular network", *Biomedical Optics Express* (Spotlight article), Vol. 3, 6, pp. 1350–1364 (2012).
- (2) Thu T. A. Nguyen, Hanh N. D. Le, Minh Vo, Zhaoyang Wang, Long Luu, and Jessica C. Ramella-Roman, "Three-dimensional phantoms for curvature correction in spatial frequency domain imaging", *Biomedical Optics Express*, Vol. 3, 6, pp. 1200–1214 (2012).
- (3) Long Luu, Z. Wang, M. Vo, T. Hoang, and J. Ma, "Accuracy enhancement of digital image correlation with B-spline interpolation," *Optics Letters*, Vol. 36, No. 16, pp. 3070-3072, (2011).

- (4) M. Vo, Z. Wang, Long Luu, and J. Ma, "Advanced geometric camera calibration for machine vision," *Optical Engineering*, 50, 110503 (2011) .
- (5) T. Hoang, Z. Wang, M. Vo, J. Ma, Long Luu and B. Pan, "Phase extraction from optical interferograms in presence of intensity nonlinearity and arbitrary phase shifts," *Applied Physics Letters*, Vol. 99, No. 3, 031104, (2011).
- (6) J. Ma, Z. Wang, B. Pan, T. Hoang, M. Vo, and Long Luu, "Two-dimensional continuous wavelet transform for phase determination of complex interferograms," *Applied Optics*, Vol. 50, No. 16, pp. 2425-2430, (2011).
- (7) Jun Ma, Zhaoyang Wang, Minh Vo, and Long Luu, "Parameter discretization in two-dimensional continuous wavelet transform for fast fringe pattern analysis," *Appl. Opt.* **50**, 6399-6408 (2011).

**Conference paper:**

- (1) Scott A. Mathews, Long Luu and Jessica C. Ramella-Roman, "Fabrication of microfluidic vascular phantoms by laser micromachining", *Proc. SPIE* 8367, 83670B (2012);
- (2) Rachel E. Annam, Mohamed A. Ibrahim, Long Luu, Yasir J. Sepah, Millena G. Bittencourt, Owhofasa Agbedia, Hyun S. Jang, Jithin Yohannan, Jessica Ramella-Roman, Quan D. Nguyen, "Assessment of Oxygen Saturation in Retinal Vessels of Normal Subjects and Diabetic Patients without Retinopathy using the Johns Hopkins Flow Oximetry System", (Abstract) *ARVO Annual Meeting* (2012).