

ROHAN CHABUKSWAR

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OBJECTIVE	Seeking a Summer Internship in Electrical and Computer Engineering
EDUCATION	<ul style="list-style-type: none">• CARNEGIE MELLON UNIVERSITY Doctor of Philosophy, Electrical and Computer Engineering, 2013 Current Grade Point Average: 3.77• CARNEGIE MELLON UNIVERSITY Master of Science, Electrical and Computer Engineering, May 2009 Final Grade Point Average: 3.88• INDIAN INSTITUTE OF TECHNOLOGY BOMBAY Bachelor of Technology, Engineering Physics, August 2008 Final Cumulative Performance Index: 8.51
TECHNICAL SKILLS	<ul style="list-style-type: none">• Programming Languages: C, C++, Linux Shell, Java, Visual Studio, PHP, Javascript, Assembly languages• Operating Systems: Linux, Windows, Mac OS, Solaris, Unix• Software: MATLAB & Simulink, Mathematica, Eclipse, Real Time Digital Simulator• Languages: English, German, French, Hindi, Marathi
AREAS OF INTEREST	Cyber-Physical Systems; Secure SCADA Systems; Control Systems; Smart Grids; Multi-Domain Simulation; Signal Processing
PUBLICATIONS	<ul style="list-style-type: none">• <i>Detecting Integrity Attacks on SCADA Systems</i>, R Chabukswar, Y Mo, B Sinopoli, 18th World Congress of the International Federation of Automatic Control, August 28, Università Cattolica del Sacro Cuore, Milano, Italy, August 28, 2011• <i>Simulation of Network Attacks on SCADA Systems</i>, R Chabukswar, B Sinopoli, G Karsai, A Giani, H Neema, A Davis, First Workshop on Secure Control Systems, CPSWeek, Stockholm, Sweden, April 12, 2010
PROFESSIONAL EXPERIENCE	<ul style="list-style-type: none">• Acoustic Research Laboratory, National University of Singapore <i>May through July 2007</i> Research Engineering Intern Worked on Small Team of Autonomous Robotic Fish (STARFish), a team of Autonomous Underwater Vehicles to be used for Acoustic Research.• Pacific Gas and Electric Company, San Francisco <i>May through August 2011</i> Information Security Intelligence Intern Analyzed Cyber-Physical and Smart Grid Threats.
AWARDS	<ul style="list-style-type: none">• Gold Medal at 8th International Astronomy Olympiad, Stockholm, 2003.• Selected for Research Science Institute, Massachusetts Institute of Technology, 2004.
LEADERSHIP	<ul style="list-style-type: none">• System Administrator for Undergraduate Computer Laboratory, Physics Department, IIT Bombay - <i>Revamped the entire computing facility, centralized accounts to institute central accounts, supervised the development of front- and back-end of the department website.</i>• Involved in training Indian Teams to International Astronomy Olympiad and International Olympiad in Astronomy and Astrophysics.

PROJECTS

- Core Group Member of Physics Olympiad team of Department of Physics, IIT Bombay, handling Academic, Technical and Marketing aspects - *Completely upgraded the technical backbone of the stage component and was responsible for influencing the primary sponsor.*
- Core Group Member, webmaster and account manager of Technical General Championship, IIT Bombay - *automatized all institute quizzes and online registration processes for all events.*

Detection of Abdominal Aortic Aneurysm in Magnetoresponse Images (*Masters Thesis Project, Carnegie Mellon University, Spring 2009*)

- Developed a robust level-set algorithm to segment the lumen, the inner and the outer wall of the aorta in a magnetic resonance image of the human abdomen.

Time Reversal Techniques (*Research Assistant, Carnegie Mellon University, Fall 2008 and Spring 2009*)

- Worked on time-reversal algorithms for a new sensor network for monitoring natural gas distribution pipes.

Needles In Haystacks (*B. Tech Project, IIT Bombay, Fall 2007 and Spring 2008*)

- Implemented a new algorithm for searching jets in huge volumes of quantum chromodynamical event data.
- The accuracy was proved to be better than or equivalent to contemporary jet-search algorithms.

Almost Monochromatic Triangles and Other Ramsey Problem Variants (*Independent Research, MIT, Summer 2004*)

- Defined and investigated color-variants of the Ramsey problem.
- Established the relations between the upper and lower bounds on the variants involving almost-equilateral triangles and those for almost equilateral triangles.

Course Projects

- Microtubule Filament Tracing and Estimation (CMU, 2009)
- Iris recognition using boundary detection and gabor wavelet filters. (IIT Bombay, 2008)
- Adaptive source separation in audio signals in MATLAB. (IIT Bombay, 2008)
- Optical character recognition system using edge direction histogram. (IIT Bombay, 2007)
- Human pulse measuring instrument (design and prototype). (IIT Bombay, 2009)
- Graduate: Linear Systems; Pattern Recognition; Machine Learning; Computer Security; Estimation; Detection & Identification; Security & Privacy; Advanced Digital Signal Processing; Biomedical Image Informatics
- Undergraduate: Wavelets; Adaptive Signal Processing; Image Processing; Embedded Systems Design; Cryptography & Network Security; Linguistics & Natural Language Processing; Analog Circuits; Microprocessors; Digital Circuits

RELEVANT COURSES