

Arvind Bhusnurmath

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Education

University of Pennsylvania, Philadelphia, PA

Ph.D. in Computer Science, May 2008

“Applying convex optimization techniques to energy minimization problems in computer vision”

Advisor: Professor C.J. Taylor

Indian Institute of Technology (IIT), Delhi, India

Integrated 5 year M.Tech in Mathematics and Computing

Research Interests

Computer vision, Image processing, CS Education.

Teaching Experience

Courses developed

CIS105 - Developed a course in introductory data science. The goal of the course was to get non-engineering students interested in computer science by exposing them to basic data science. Students learned the basics of Python programming, statistics and data visualization while exploring real world data sets.

Courses taught (all courses at the University of Pennsylvania)

- CIS 105 - Computational Data Exploration: Fall 2016
- CIT 590 - Programming Languages and Techniques: Fall 2013, Spring 2014, Spring 2015, Spring 2016
- CIT 596 - Algorithms and Computing: Spring 2014, Spring 2015, Spring 2016
- CIS 110 - Introduction to Computer Programming: Summer 2014, Fall 2014, Fall 2015
- CIT 592- Mathematical Foundations of Computer Science: Fall 2013 - Fall 2016
- ESE 220 - Introduction to Algorithms and Data Structures, Spring 2008

Teaching Assistant (all courses at University of Pennsylvania)

- MATH 103 Introduction to Calculus: Fall 2007
- CSE 260 Discrete Mathematics: Fall 2006
- CIS 511 Introduction to Theory of Computation: Spring 2004
- CIS 240 Introduction to Computer Systems: Fall 2003

Professional and Research Experience

Lecturer, September 2013 - present

University of Pennsylvania, Department of Computer and Information Science, Philadelphia, PA
Teaching 2 courses a semester. Average class size 60 students.

Lead Engineer, Feb 2011 - August 2013
Applied Predictive Technologies, Arlington , VA

Software Engineer, January 2007 - February 2011
Applied Predictive Technologies, Arlington , VA
Worked on developing software as a service for analyzing the impact of tests conducted at large scale retail chains, banks and restaurants.

Part time Lecturer , Spring 2008
University of Pennsylvania, Department of Electrical and Systems Engineering, Philadelphia, PA
Taught the the basics of data structures to a small class of Electrical Engineering undergraduate students.

Publications

Nifty assignments, SIGCSE, 2016. Please see <http://dl.acm.org/citation.cfm?id=2844678> for the full list of authors. Nifty assignments is a special session that is about promoting and sharing the ideas and ready-to-use materials of successful assignments.

Solving Image Registration Problems Using Interior Point Methods, Taylor, C.J. and Bhusnurmath, A., European Conference of Computer Vision, 2008

Graph cuts via L1-norm minimization, Bhusnurmath, A. and C.J.Taylor, IEEE Transactions on Pattern Matching and Machine Intelligence (PAMI) Vol 30(10), 2008

Stereo matching using interior point methods, Bhusnurmath, A. and C.J.Taylor, 3DPVT 2008

Recovering Camera Motion and Mobile Objects in Video Documents. Book Chapter, Quenot G.M., Mulhem P., Paulin D., Kumar D., Bhaskar R. and Bhusnurmath A , A Highway to Intelligent Multimedia Documents, pages 83- 112. Kluwer, 20

Departmental service

WICS high school day
Ran a programming workshop in Scratch during WICS high school day.

TA training
Ran the TA training program for CIS110, CIS120 and CIS121 TAs for Fall 2015. This primarily involved coordinating observations of recitation sections and inviting guest speakers to talk to the TAs about issues like diversity and mental health.