

# AKSHAY RAJHANS

Principal Research Scientist, Research Alliance Manager, Innovation Officer

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Natick, MA

## EXPERIENCE

### Principal Research Scientist

#### MathWorks

July 2013–Present

Natick, MA

- Identify and foster research and innovation at the interface between MathWorks and academia, industry, and government research labs.
- C++ software development based on core semantics of Simulink.

### Ph.D. Candidate

#### Carnegie Mellon University

July 2008–May 2013

Pittsburgh, PA

- Research in formal verification, software architectures, model-based design, electronic design automation
- Collaborative research work with Toyota

### Research Intern

#### Bosch, Research & Technology Center

August 2009–December 2009

Pittsburgh, PA

- Developed a new approach to non-intrusive load monitoring using hybrid system state estimation.
- Co-inventor on a patent.

### Research, Teaching, and Operations Staff

#### University of Pennsylvania, GRASP Lab

January 2006–June 2008

Philadelphia, PA

- Research software toolbox development in MATLAB.
- Teaching assistantship in Math and Electrical and Systems Engineering Departments
- Operations staff at Wharton Management Department and Chemistry Library

### Manager, IBU Application Engineering & Operations Management Program Participant

#### Cummins

August 2003 – December 2005

Pune, India

- Research, development, and application engineering for electronic controls software and hardware for diesel engines applications in mining, marine, defense, rail, compressors, oil rigs, fire pumps, automotive and off-highway construction equipment.
- One of only two engineers in charge of Electronic Controls of all of Industrial Business Unit (IBU) Applications in India.

## PUBLICATIONS

Theses, Book Chapters, Papers, Manuscripts, Abstracts, Posters  
arajhans.github.io/publications.html

Patents  
arajhans.github.io/patents.html

## EDUCATION

### Ph.D., ECE

#### Carnegie Mellon University

Jul '08–May '13

Pittsburgh, PA

### M.S., EE

#### University of Pennsylvania

Jan '06–Dec '07

Philadelphia, PA


### B.E., E&TC

#### University of Pune


Aug '99–May '03


Pune, India

## ACHIEVEMENTS

 **Program Committee (PC) Leadership**  
MathWorks Research Summits, SpringSim, ADHS, WinterSim

**PC Membership**  
HSCC, ICCPS, ADHS, ICINCO, SummerSim, CoSim-CPS, CITest\_CPS


 **Invited Speaker**  
CPS Week, Tufts, MIT, Penn, WPI, CMU, Robotica

 **Invited Panelist**  
HSCC-ICCPS '18, SpringSim '18, NIST CPS Framework Workshop, SCAV '17


 **Ph.D. Thesis Committee**  
Rensselaer Polytechnic Institute


**Judge**  
CPS V&V Grand Prix, Carnegie Mellon

**MathWorks Tech Lead**  
CAT Vehicle Challenge

 **Industry Advisory Boards**  
WPI Autonomous Vehicles IAB, ISCAS '18 IAB, ACM GPAC

 **Technical Committee**  
IEEE TC on Homeland Security

 **Editorial Advisory Board**  
Upcoming Springer book on Resilience in Cyber-Physical Systems

 **McCalla Best Paper Award**  
ICCAD '11

Work featured as Research Highlight  
Communications of the ACM '13

## SOFTWARE SKILLS

 **Languages**  
MATLAB, C++, C, some Java