

# ROHAN CHABUKSWAR

Collins Aerospace Applied Research & Technology, Penrose Wharf Business Centre, Cork, Ireland

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## PROFESSIONAL EXPERIENCE

### **Collins Aerospace Applied Research & Technology**

Chief Technologist *June 2022 – Present*  
Principal Research Scientist *April 2021 – June 2022*  
Staff Research Scientist *March 2018 – April 2021*  
Senior Research Scientist *July 2014 – March 2018*

### **Pacific Gas and Electric, San Francisco**

Information Security Intelligence Intern *May – August 2011*

### **Acoustic Research Laboratory, NUS**

Research Engineering Intern *May – July 2007*

## EDUCATION

### **CARNEGIE MELLON UNIVERSITY**

Doctor of Philosophy, Electrical and Computer Engineering, May 2014

### **CARNEGIE MELLON UNIVERSITY**

Master of Science, Electrical and Computer Engineering, May 2009

### **INDIAN INSTITUTE OF TECHNOLOGY BOMBAY**

Bachelor of Technology, Engineering Physics, August 2008

## LANGUAGES

**English, German, French, Hindi, Marathi**

## TECHNICAL SKILLS

- **Programming Languages:** Java, Python, C++, Visual Studio, PHP, JS, CSS
- **Operating Systems:** Linux, Windows, Mac OS, Solaris, Unix
- **Software:** MATLAB & Simulink, Mathematica, Eclipse

## PATENTS

**Ice Detector System and Method**, *EP4137412*, R Chabukswar, E Ridouane, et al, 2021

**Ice Detection Arrangement**, *EP3854691*, K Debbadi, E Ridouane, R Chabukswar, et al, 2020

**Building Health Assessment And Commissioning Tool With Dynamic Report Generation**, *PCT/US2018/047855*, R Chabukswar, K Mukherjee, A Ghosh, 2019

**Automated Monitoring System For A Forced Air Handling System And Method Of Operation**, *PCT/US2018/042665*, K Mukherjee, R Chabukswar, A Ghosh, 2019

**A Service System Of An Air Conditioning System**, *PCT/US2018/042662*, K Mukherjee, R Chabukswar, 2019

## SELECTED PUBLICATIONS

*Development and Validation Testing of the Collins Ice Differentiator System in App C and App O Icing Conditions*, M Hamman, EH Ridouane, G Gelao, R Chabukswar, et al, SAE Technical Paper, Jan. 2023

*Field Demonstration of an Automated Building Commissioning Tool*, H Reeve, A Ghosh, B Jing, R Chabukswar, Y Li, Z Zhu, ASHRAE Winter Conference, Jan. 2019

*Longest Straight Line Paths on Water or Land on the Earth*, R Chabukswar, K Mukherjee, arXiv:1804.07389 [math.HO]

*A Framework for Attack-Resilient Industrial Control Systems: Attack Detection and Controller Reconfiguration*, K Paridari, N O'Mahony, A E Mady, R Chabukswar, M

Boubekeur, H Sandberg, Proc. IEEE, vol. 106, pp. 113 – 128, Jan. 2018  
*Implementation Experiences from Smart Grid Security*, R Chabukswar, S Basagiannis, Y Yang, K McLaughlin, M Boubekeur, Book Chapter, Smart Grid Security  
*Secure Detection Using Correlated Binary Sensors*, R Chabukswar, B Sinopoli, ACC 2015, Chicago, United States  
*Secure Detection in Cyberphysical Control Systems*, PhD Thesis  
*Detecting Integrity Attacks on SCADA Systems*, Y Mo, R Chabukswar, B Sinopoli, IEEE Transactions on Control Systems Technology, vol. 22, no. 4, pp. 1396 – 1407, July 2014  
*Secure Detection Using Binary Sensors*, R Chabukswar, Y Mo, B Sinopoli, IFAC NecSys 2013, Koblenz, Germany  
*Detecting Integrity Attacks on SCADA Systems*, R Chabukswar, Y Mo, B Sinopoli, IFAC World Congress 2011, Milan, Italy  
*Simulation of Network Attacks on SCADA Systems*, R Chabukswar, B Sinopoli, G Karsai, A Giani, H Neema, A Davis, First Workshop on Secure Control Systems, CPSWeek 2010, Stockholm, Sweden

## AWARDS

International Trade Compliance Rising Star Award, May 2019 *Demonstrating growth and impact to International Trade Compliance community*, United Technologies Corporation  
 Outstanding Achievement Award, March 2017 *Automated Building HVAC Commissioning and Controls Tuning*, United Technologies Research Center  
 Extra Effort Award, October 2016 *Exceptional Support to Automated Commissioning Tool Development*, United Technologies Research Center  
 Dean's Tuition Fellowship, 2009, Carnegie Institute of Technology  
 Gold Medal, 8<sup>th</sup> International Astronomy Olympiad, Stockholm, 2003

## CERTIFICATIONS

QQI Level 5 Occupational First Aid, *Quality & Qualifications Ireland*  
 Enriched Air Diver, *Professional Association of Diving Instructors*  
 Advanced Open Water Diver, *Professional Association of Diving Instructors*  
 Idaho National Laboratory SCADA Security

## LEADERSHIP

- Ambassador for Cork Community, InterNations.
- System Administrator for Undergraduate Computer Laboratory, Physics Department, IIT Bombay — *Revamped the entire computing facility, centralized accounts to institute central accounts, supervised the development of front- and back-end of the department website.*
- Involved in training Indian Teams to International Astronomy Olympiad and International Olympiad in Astronomy and Astrophysics.
- Core Group Member, webmaster and account manager of Technical General Championship, IIT Bombay — *automatized all institute quizzes and online registration processes for all events.*

## RELEVANT COURSES

Networked Cyber-Physical Systems, Linear Systems, Pattern Recognition & Machine Learning, Estimation, Detection & Identification, Adaptive & Advanced Digital Signal & Image Processing, Stochastic Processes, Wavelets, Cryptography, Security & Privacy, Electrical Power Systems, Bio-Imaging, Informatics & Analysis, Analytical Techniques, Linguistics & Natural Language Processing, Microprocessors, Digital & Analog Circuits, Quantum Mechanics & Electronics, Atomic, Molecular & Nuclear Physics, Astrophysics, Special & General Relativity, Statistical Physics, Classical Mechanics, Electromagnetism, Photonics, Condensed Matter Physics, Complex Analysis, Molecular Cell Biology, Thermodynamics, Optics, Engineering Drawing