



National Center for
Risk and Economic Analysis of Terrorism Events

[Home](#)
[About CREATE](#)
[Research](#)
[Education](#)
[Publications & Reports](#)

Announcements

Report/Publication

New Book "Security and Game Theory" by
CREATE's Milind Tambe

April 18, 2012



Event

USCG-CREATE Maritime Risk
Symposium

March 28, 2012



Event

VIEW CREATE Seminar - "Maritime
Security in 2012 - Challenges Faced By
The U.S. Coast Guard"

March 2, 2012



Update

White Paper Competition Now Open -
February 17 Due Date

January 23, 2012

Report/Publication

New Research in Game Theory and
Disaster Recovery Published

September 20, 2011

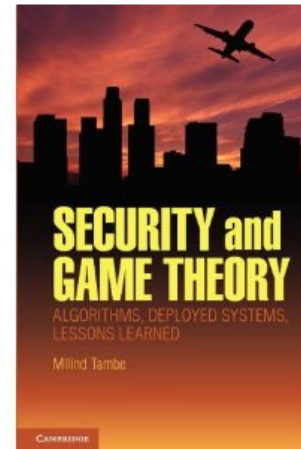
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New Book "Security and Game Theory" by CREATE's Milind Tambe

Date: April 18, 2012

In the past five years, Dr. Milind Tambe has made significant contributions to the field of homeland security through his work at USC's National Center for Risk and Economic Analysis of Terrorism Events (CREATE).

But as Dr. Tambe and his research team at CREATE leveraged their expert knowledge of game theory while tackling some of homeland security's toughest challenges, there was no definitive source for information on what they have done and how they have done it.



That changed in December when Cambridge University Press published Dr. Tambe's *Security and Game Theory: Algorithms, Deployed Systems, Lessons Learned*.

"This was and is the first and only long-term deployed set of applications of game theory for security, leading to new innovative research and simultaneously newer and newer applications," he said.

The first goal Dr. Tambe had was bridging the gap between theory and practice. To do this he employed the help of homeland security experts such as Erroll G. Southers, CREATE's Associate Director for Research Transition, and Dr. Joseph DiRenzo III, the chief of Operations Analysis Division for the Coast Guard Atlantic Area.

"Having seen our research transition to multiple applications, it was important at this stage to publish one comprehensive book that had all these publications and chapters from key world-leading experts in security to present this work to other security professionals in the field," Dr. Tambe said.

Southers, a former Deputy Director of the California Office of Homeland Security and a member of President Obama's Homeland Security Policy Group during his 2008 campaign, wrote a chapter on the terror threat at Los Angeles International Airport (LAX) and other airports.

"My chapter outlines the scope and importance of the need to address the terror threat at LAX," Southers said. "It clearly defines LAX as the number one airport terror target in the U.S."

"Contributions of Erroll and U.S. Coast Guard are crucial in providing a 'problem statement' on security of critical infrastructure or maritime security," Dr. Tambe said.

One misperception of the work done at CREATE is that by publicizing it adversaries will be able to study it and create countermeasures.

"This is one of the most important advantages of our research," Dr. Tambe said. "Our algorithms are public domain knowledge. So understanding our research will not lead to any benefit to the adversary."

"Indeed, if the adversary runs the exact same algorithm with the exact same data as input, due to the inherent randomness, they will get a different answer," Dr. Tambe continued. "So unless they capture the exact computer that generates our scheduling patterns, they will not be able to figure out the patterns in use."

Since the establishment of CREATE in 2004 as a partnership between USC's Price School of Public Policy and the Viterbi School of Engineering, the federally-funded CREATE has worked on projects for LAX, the Federal Air Marshals Service, the Transportation Security Administration, and the Coast Guard, among others. Dr. Tambe believes *Security and Game Theory* is a product of the prodigious partnership that has flourished at CREATE.

"I am grateful to CREATE for all the generous support of the research reported in the book, without which the book would not have been possible," Dr. Tambe said. "I am also grateful to CREATE for the continuous advice, support, encouragement, and domain expertise to lead to the success we seem to have enjoyed."

The book is available on Amazon: <http://www.amazon.com/Security-Game-Theory-Algorithms-Deployed/dp/1107096421>

About the book:

Game theory provides a sound mathematical approach to deploy limited security resources to maximize their effectiveness. This book distills the forefront of this research to provide the first and only study of long-term deployed applications of game theory for security for key organizations such as the Los Angeles International Airport police and the U.S. Federal Air Marshals Service.