QRS 2017
Photo Album
07/26


Eric Wong
University of Texas
at Dallas


Posters
Tutorials
We hope you will enjoy these presentations.
•Please join us also for the organized by QRS:
✓ Excursion for a guided tour to the Old Town Square in Prague
✓ Banquet with a concert and an award ceremony.


National Cybersecurity Challenges and NIST
Matthew Scholl
Chief Computer Security Division
NIST
National Cybersecurity Challenges and NIST
Matthew Scholl
Chief Computer Security Division


iTL
The Importance of Standards
Article I, Section 8: The Congress shall hav
power to…fix the standard of weights an
measures
We the People THE CONSTITUTION OF THE UNITED STATES OF AMERICA
National Bureau of Standards established by Congress in 1901
Eight different "authoritative" values for the gallon
Electrical industry needed standards
American instruments sent abroad for calibration
Consumer products and construction materials uneven in quality and unreliable
Estimated that 80% of global merchandise trade is influenced by testing and other measurement-related requirements of regulations and standards
NIST National Institute of Standards and Technology / U.S. Department of Commerce


iTL
Testing and Conformance for the
Cryptography – Algorithms and modules.
change to how, when and who conducts
validation
ID Credential (PIV) – USG identity in card
Undergoing change to look at new
SCAP Tools – Automated tools using
information. Looking to SDOs for next set of
information
NIST


Matthew Scholl


iTL
National Initiative For Cybersecurity Education (NICE)

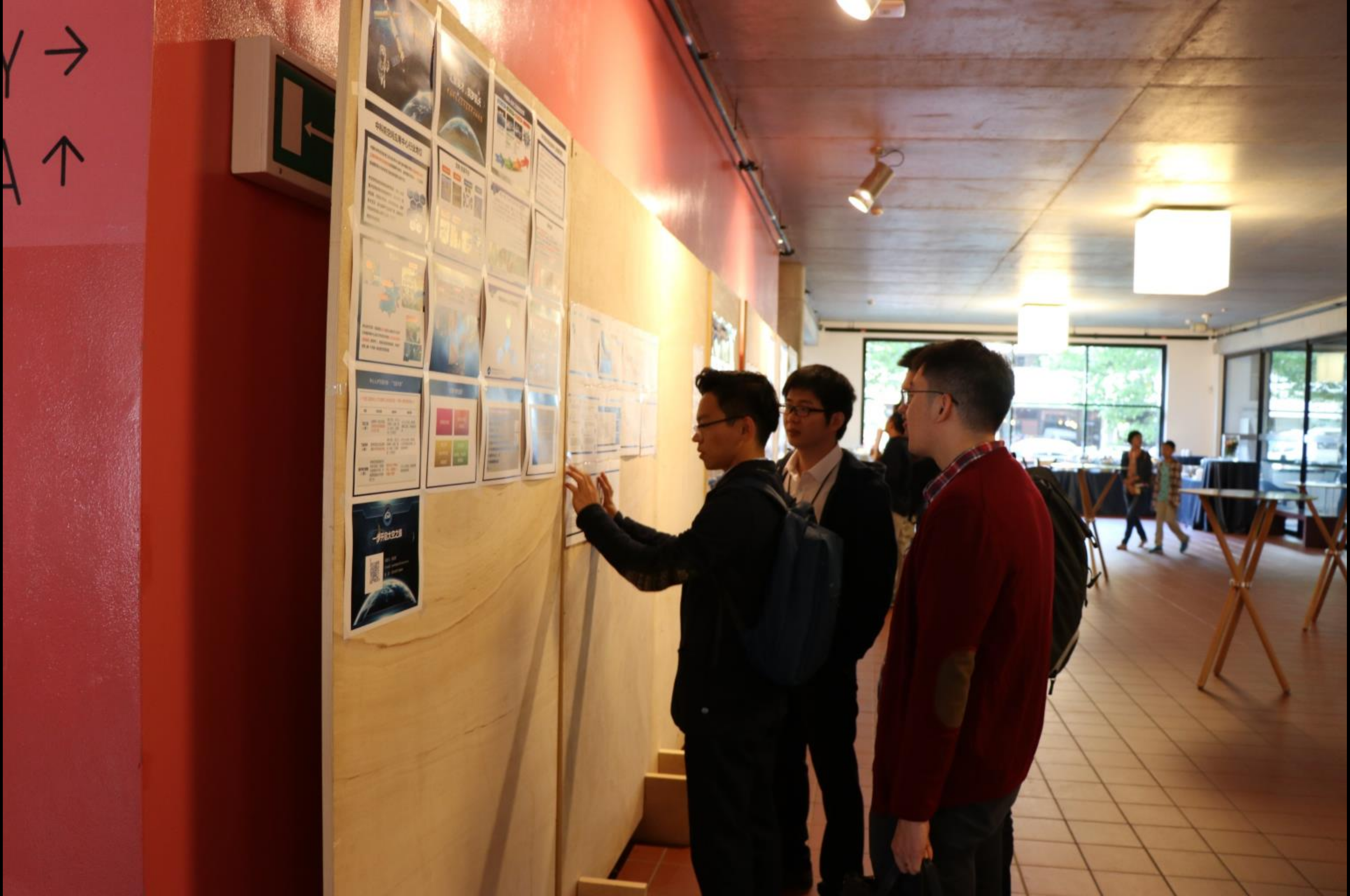

DALLAS


105


Stanford


First IEEE International Software Testing Contest
ISTC 2017
SPONSORS
HPI
IEEE
ReliabilitySociety
QRS 2017
EXIT

Aim of This Paper
Coding-Style Analysis
Static Analysis
CDC Analysis
Static Timing Analysis
Dynamic Simulation
Importance of Verification
The efficiency to find hidden errors or risks has become an urgent issue [6]
CDC Analysis
Why do we need CDC Analysis?
What is a clock domain?




QRS 2017
Phil Owen
AECOM


MOOCTEST

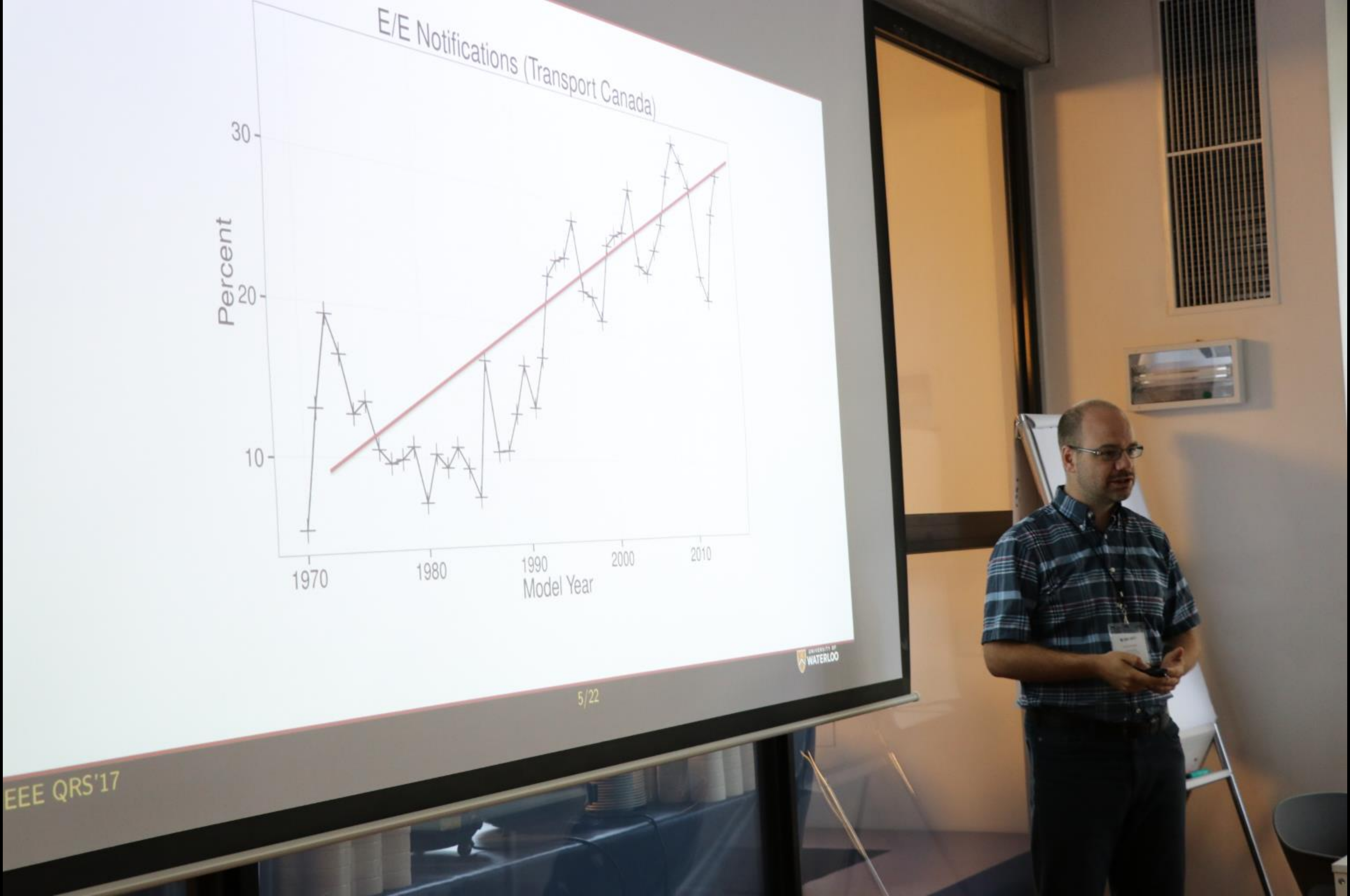

Random selection
P-measure in Random selection:
$P = 1- (1-\theta)^N$
e.g. $1- (1-0.01)^{230}=0.9$
θ: failure rate, the ratio between the failure-causing inputs and the total size of the input domain
P: the probability of detecting the first defeat for a test set (suit)
N: the number of test cases in the test set (suit)
EXIT


P-measure in Random selection
θ: failure rate, the ratio between the failure-causing inputs and the total size of the input domain
P: the probability of detecting the first defect for a test set
N: the number of test cases in the test set


AWESOME


1.1. Go to http://mooctest.net
Click "Register" link
MOOCTEST
Type in your information and complete the registration
Make sure you choose "member" instead of "manager"
Identity *
member
manager
Email *
Password *
Password

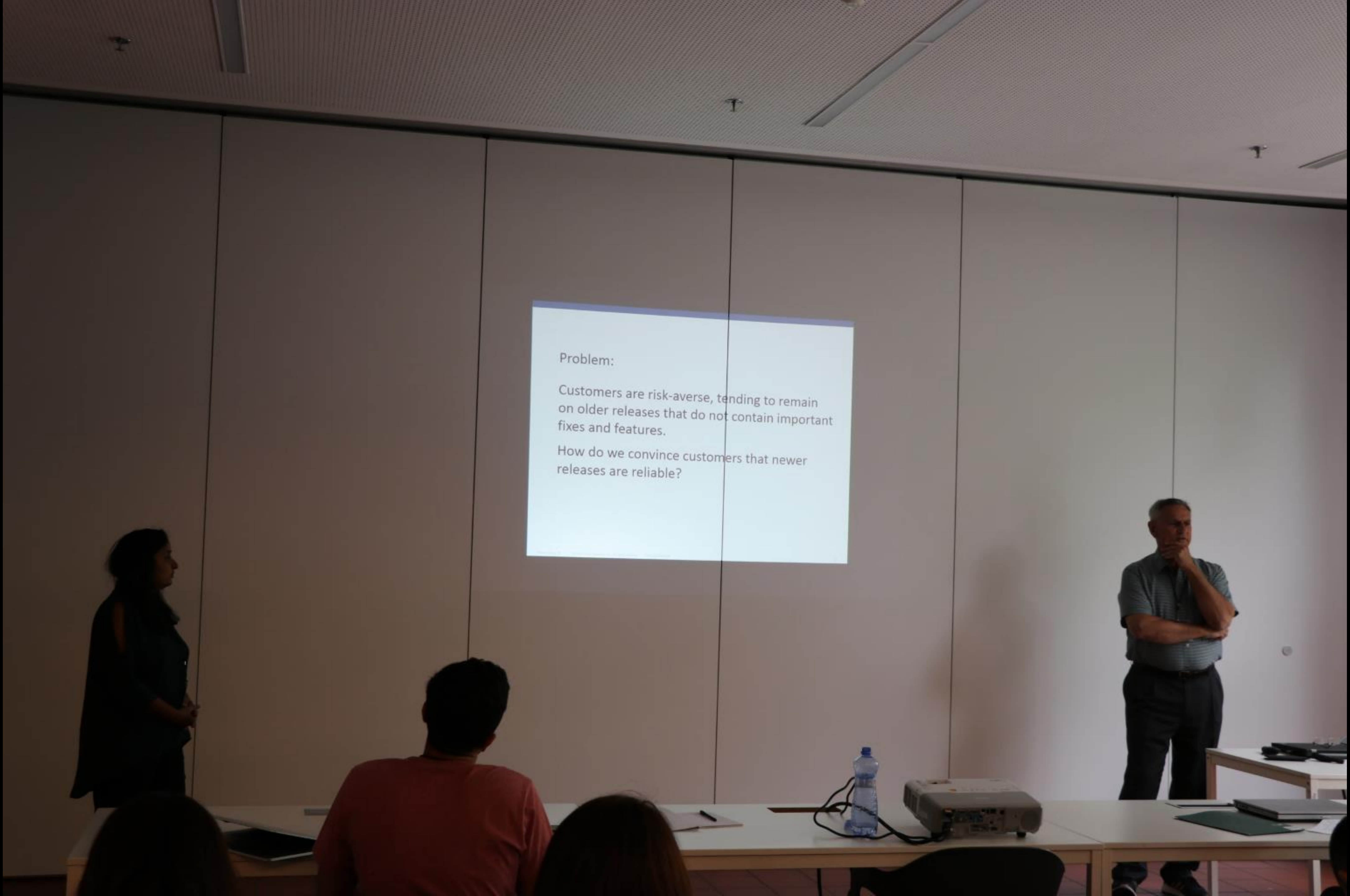

Approach - SOME
Statement-Oriented Mutant rEduction strategy
SOME firstly selects the total set of mutation operators and employs them to produce mutants on each statement covered by failed test cases.
Then SOME selects a specific percentage of mutants by utilizing mutants sampling method on each mutant point for each statement.



E/E Notifications (Transport Canada)
Percent
30
20
10
1970
1980
1990
2000
2010
Model Year
WATERLOO
5/22
EEE QRS'17


Sridhar Adepu


Naive method:
Input
Test suite, Test result
Max interaction size, t
4-way test → t = 4
k = 1
1. Extract all 1-tuples of parameter-values
included in the failed test cases.
TP = {(p1.1), (p2.1), (p3.2), (p4.2), (p5.2), (p3.1), (p5.3)}
2. For each 1-tuple in TP, check whether or not
it is included in any passed test cases.
FI = {}
10


Problem:
Customers are risk-averse, tending to remain on older releases that do not contain important fixes and features.
How do we convince customers that newer releases are reliable?


Software Reliability as User Perception
Application of the Fuzzy Analytic Hierarchy Process to Software Reliability Analysis
Felipe Febrero, M. Angeles Moraga, Coral Calero.
Instituto de Tecnologías y Sistemas de la Información
Universidad de Castilla-La Mancha
Felipe Febrero Hidalgo
ffebrero@computer.org
LED ZEPPELIN


Greek salad
with olives
and feta cheese
Capo d'Istria


Atle Refsdal


Raw data to observe


Outline
1. Motivation
2. The Android Permission Framework
3. High Level Petri Nets
4. Incrementally Building Petri Net Model of Android Permission Framework
5. Model Analysis
6. Related Works
7. Concluding Remarks
2
Florida International University School of Computing & Information Sciences


ÁTELIER 252
GOČAR


NJSD
2017

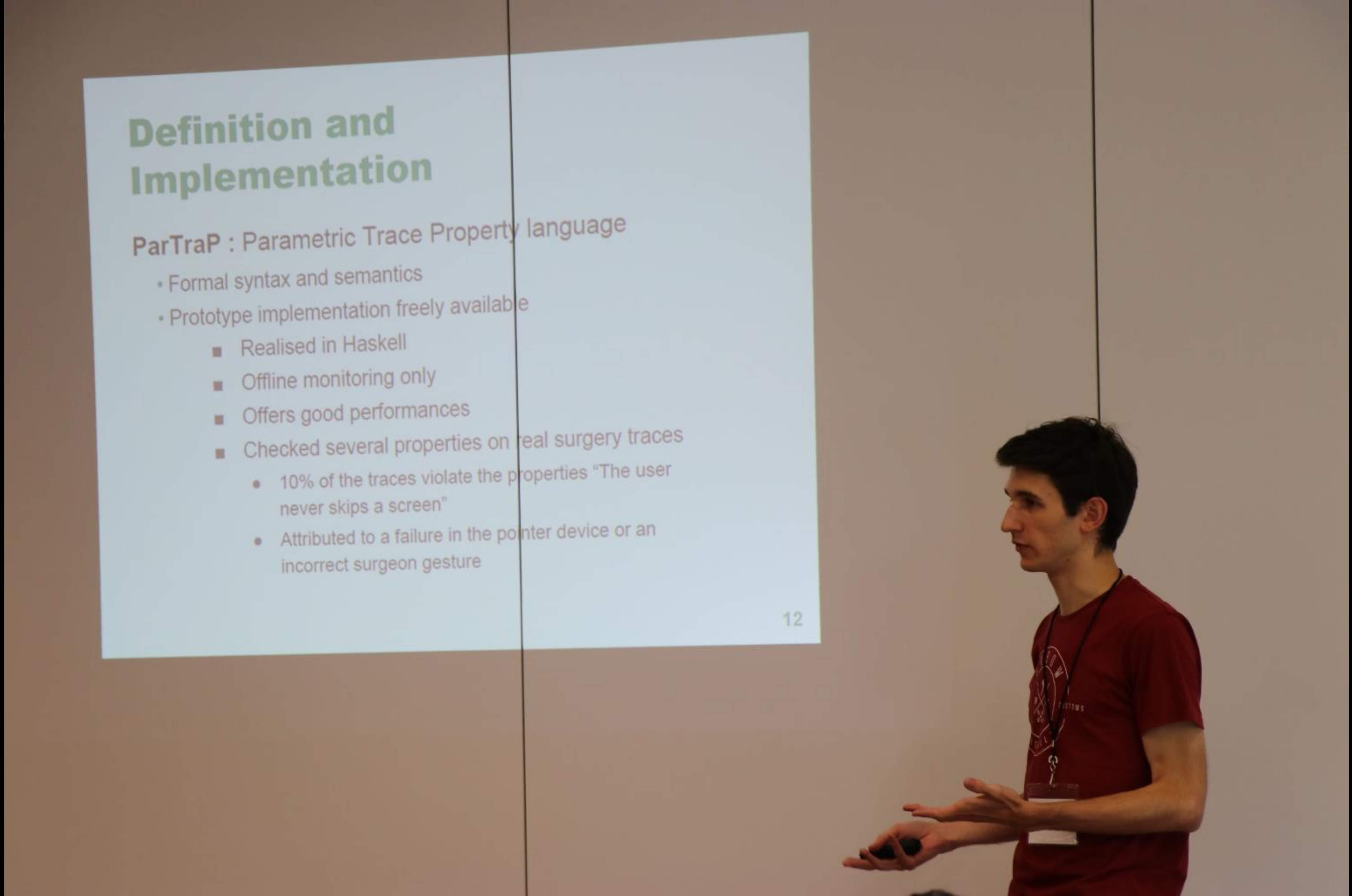

MOOCTEST
Performance statistics
Member status
EXIT


New component: current reliability is r,
revised reliability is r − f(R(r,x) − R_tar).
Existing component: remove one redundant component and judge
aints are still be met. If not, delete the component from
components set, and choose the second lowest important compone
optional components set to reduce its reliability or remove one redundan


QRS 2017
Peter Herrmann
Norwegian University of
Science and Technology


Xuetao Tian
Beijing Jiaotong University


Definition and Implementation


Definition and Implementation
ParTraP : Parametric Trace Property language
• Formal syntax and semantics
• Prototype implementation freely available
Realised in Haskell
Offline monitoring only
Offers good performances
Checked several properties on real surgery traces
10% of the traces violate the properties "The user never skips a screen"
Attributed to a failure in the pointer device or an incorrect surgeon gesture
12

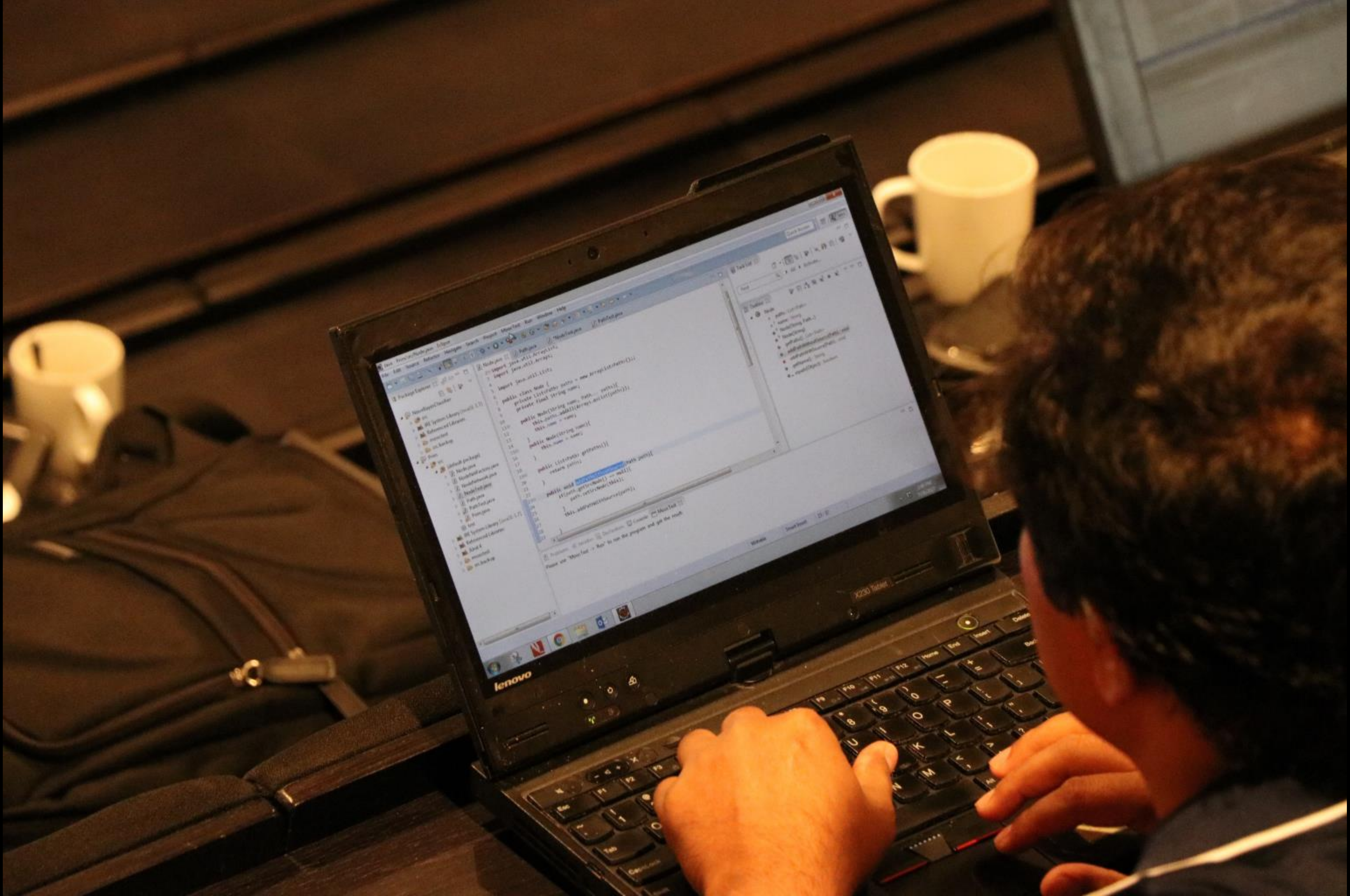

QRS 2017
Fehmi Jaafar


Yang Liu
Beijing Institute of Astronautical
System Engineering

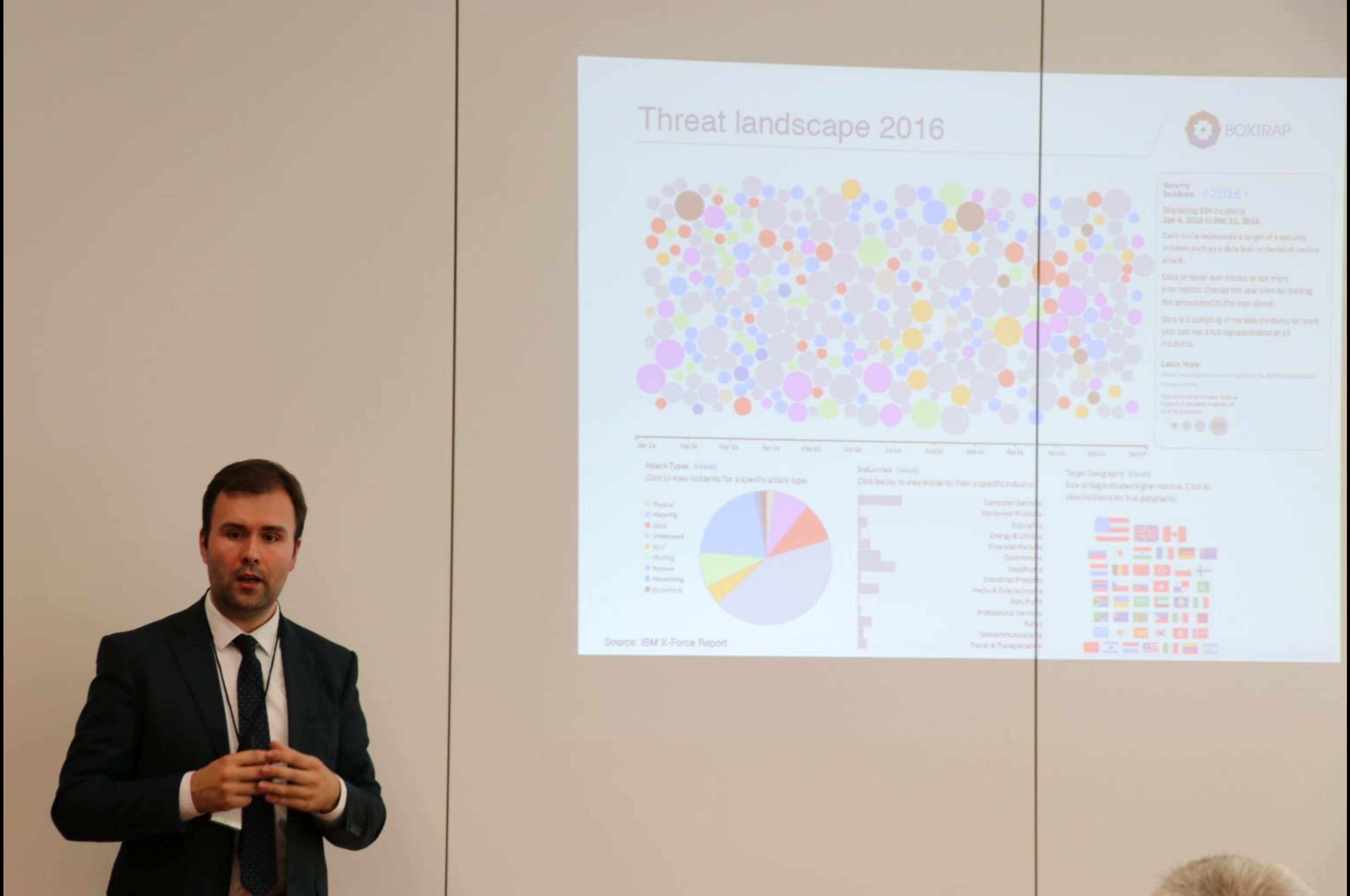

QRS 2017
Daniel Brahneborg


Overview
Domain: control automation engineering
Architecture for cloud-based monitoring, checking of control software components wrt behavioural specification via trace messages
Simulate controller-software components
Preliminary results for simple performance evaluation (msg rate / CPU usage / bandwidth)
RMIT UNIVERSITY
Virtual Experiences Laboratory
14:52
26.07.2017


MOOCTEST
Performance statistics
Member status
EXIT


lenovo
X230 Tablet


Thank you!


Threat landscape 2016
BOXTRAP
Source: IBM X-Force Report


Stochastic Comparisons of Used Coherent System and New System of Used Components for Non-identically Distributed and Dependent Components [1]
Rui Fang
Department of Mathematics
Shantou University
Shantou, Guangdong 515063, China
July 26, 2017
[1]Based on a joint work with Prof. Xiaohu Li at Stevens Institute of Technology, USA.


MOTIVATION AND GOALS
The purpose of this systematic mapping study is to provide an overview of the empirical research in the area of cloud-based software testing, in order to build a classification scheme.
Our survey of the literature shows that there are no comprehensive systematic mapping studies in the area of cloud software testing. This led us to work on the systematic mapping study presented in this paper.
Investigate both functional and non-functional testing methods, the application of these methods, and the purpose of testing using these methods.

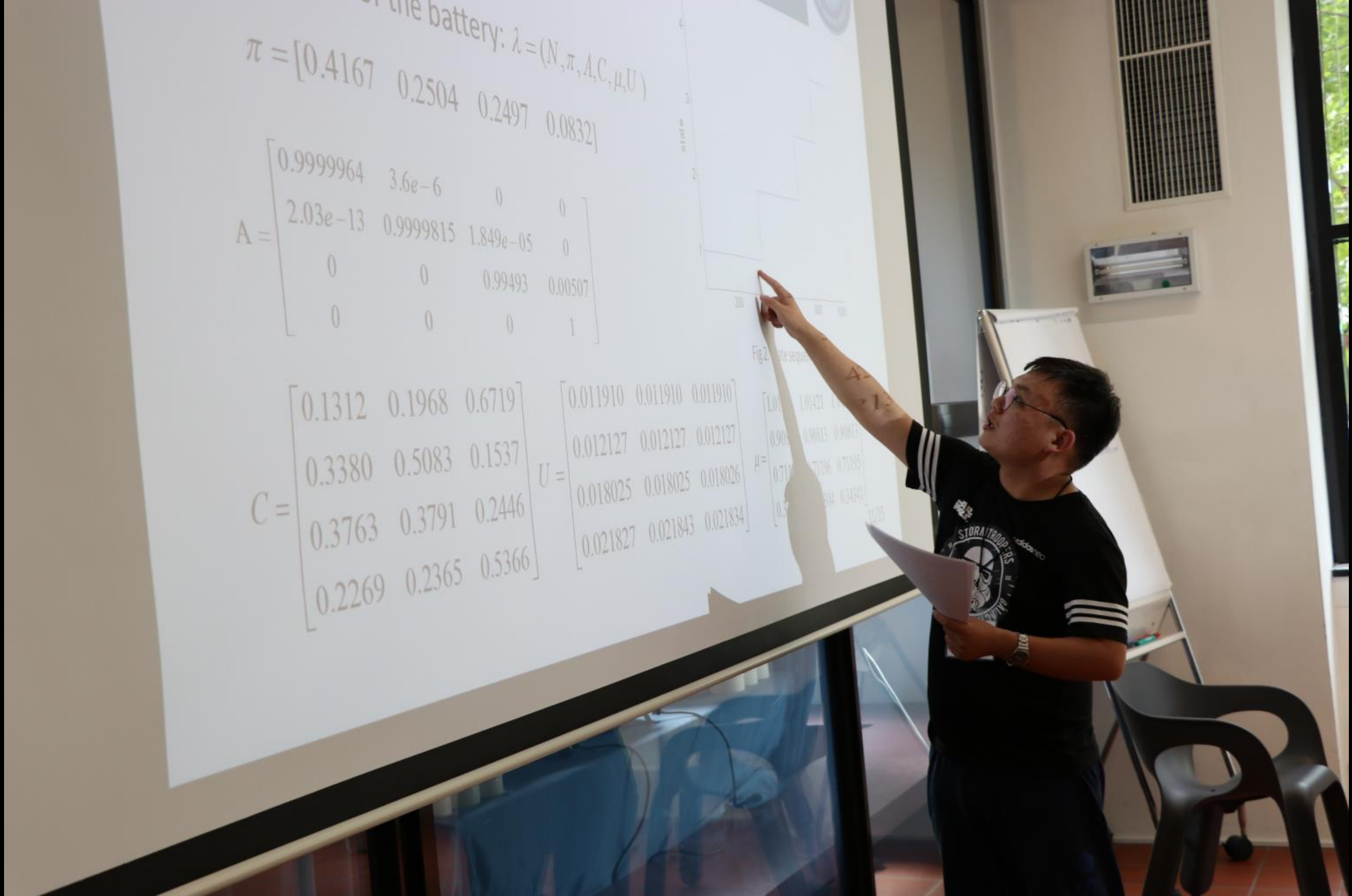

pastry
raisins


servers


Center Hagenberg GmbH


E-mail: yxbbuaa@buaa.edu.cn
EXIT

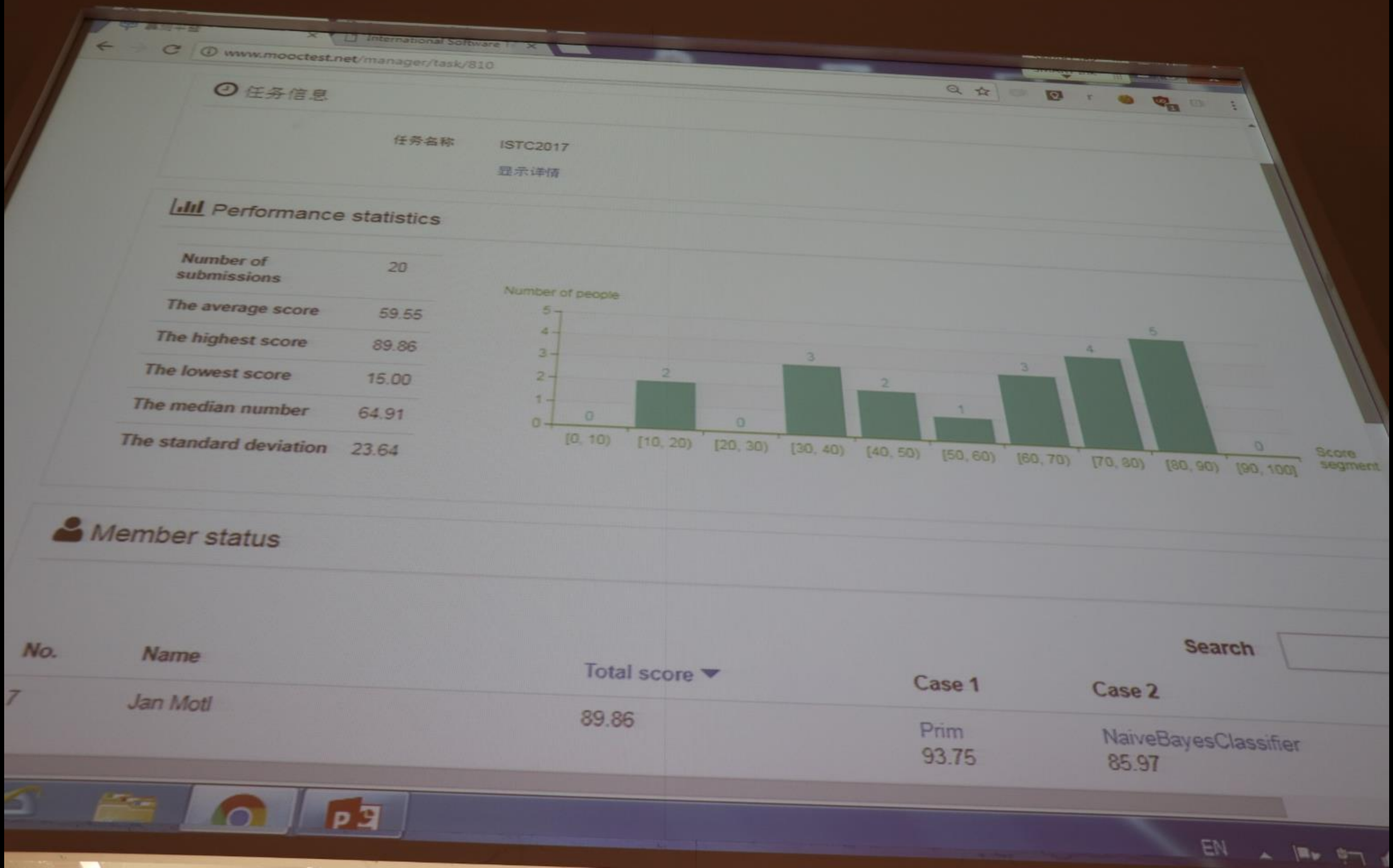

primary inputs
Question: How to find r_S for


the battery: λ=(N,π,A,C,μ,U)
π =[0.4167 0.2504 0.2497 0.0832]
A =
0.9999964 3.6e−6 0 0
2.03e−13 0.9999815 1.849e−05 0
0 0 0.99493 0.00507
0 0 0 1
C =
0.1312 0.1968 0.6719
0.3380 0.5083 0.1537
0.3763 0.3791 0.2446
0.2269 0.2365 0.5366
U =
0.011910 0.011910 0.011910
0.012127 0.012127 0.012127
0.018025 0.018025 0.018026
0.021827 0.021843 0.021834
μ =


QRS 2017
Bernhard Peischl


ASUS


QRS 2017
Qiang Han


www.mooctest.net/manager/task/810
任务信息
任务名称
ISTC2017
显示详情
Performance statistics
Number of submissions 20
The average score 59.55
The highest score 89.86
The lowest score 15.00
The median number 64.91
The standard deviation 23.64
Number of people
Score segment
[0, 10) [10, 20) [20, 30) [30, 40) [40, 50) [50, 60) [60, 70) [70, 80) [80, 90) [90, 100]
Member status
No.
Name
Total score
Case 1
Case 2
Search
Jan Motl
89.86
Prim
93.75
NaiveBayesClassifier
85.97
EN


1st IEEE International Software
Testing Contest


FJ


NATIONAL INSTRUMENTS
Replay
1981
Blue Jeans
QRS 2017
Jesús Morán