MARINHO.BARCELLOS@UFRGS.BR

AN OVERVIEW OF THE BRAZILIAN ACADEMIC SECURITY LANDSCAPE

OVERVIEW

▸ CESeg SIG

▸ SBSeg symposium

▸ Cyber security document issued by CESeg

SBC CESEG – "SPECIAL COMMISSION ON SECURITY"

▸ aka *special interest group on information and computer system security*

▸ formed by members of SBC - Brazilian Computer Society

▸ created in Aug 2004

▸ maintains e-mail discussion list (sbseg-l)

▸ hosts website http://ceseg.inf.ufpr.br
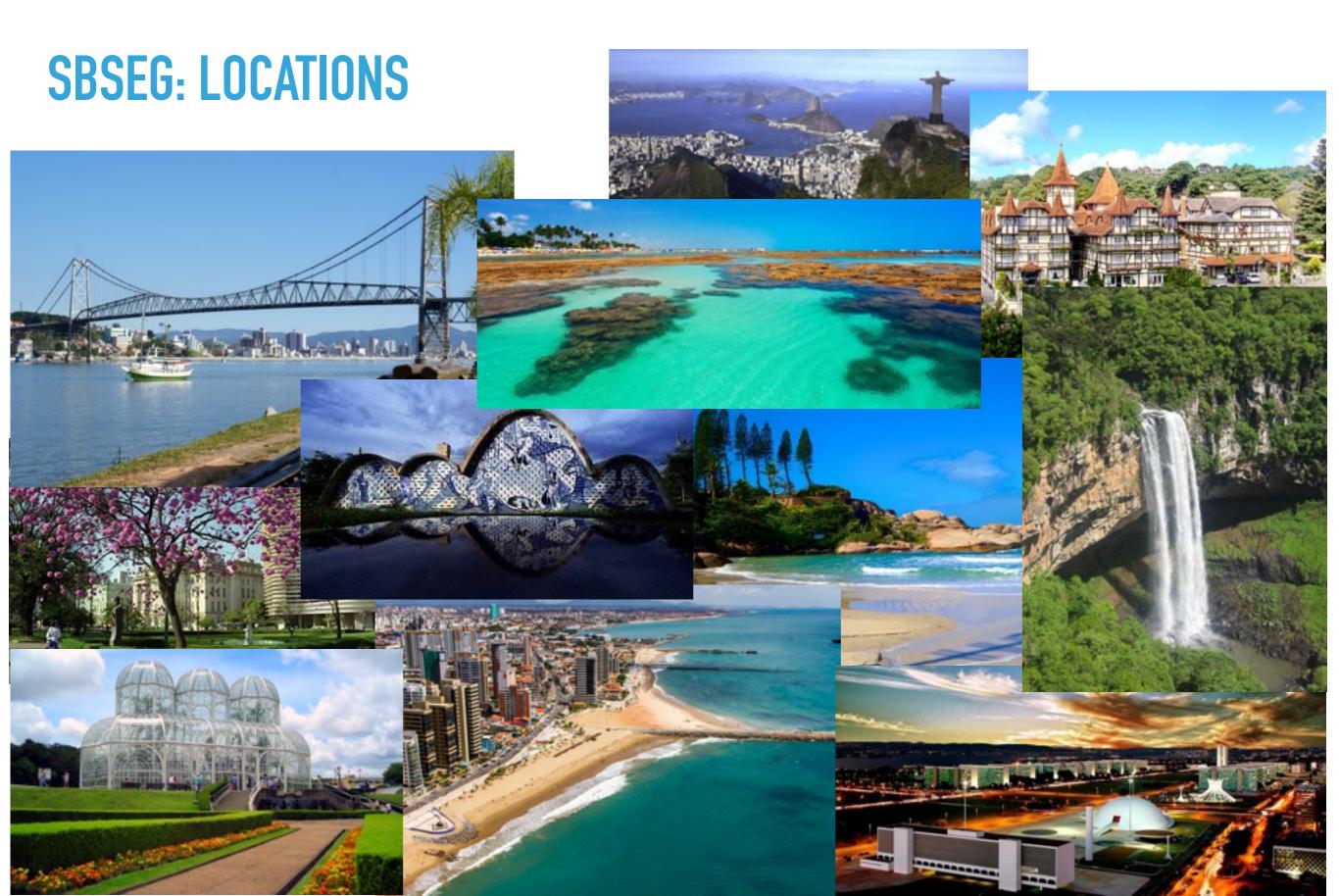
SBC CESEG – "SPECIAL COMMISSION ON SECURITY"

▸ exec committee: elected chair & vice-chair with 2-year mandate, plus steering committee

▸ meets annually with community during academic event

▸ current executive committee

  ▸ Aldri dos Santos (UFPR), Eduardo Feitosa (UFAM)

  ▸ Eduardo Souto (UFAM), Raul Ceretta Nunes (UFSM), Leonardo Oliveira (UFMG), Diego Aranha (UNICAMP), Michelle Wangham (UNIVALI), Carlos Maziero (UFPR), Marjory Abreu (UFRN)

▸ CESeg key function is to organize SBSeg symposium

OVERVIEW

▸ CESeg SIG

▸ SBSeg symposium

▸ Cyber security document issued by CESeg

SBSEG: BRAZILIAN SYMPOSIUM ON SECURITY

▸ *Brazilian Symposium on Information and Computer Systems Security*

▸ academic event with 200-300 attendees

▸ promoted annually since 2001, around Sept-Nov

▸ held as workshop 2001-2004 within computer network community (SBRC)

▸ organization committee: general chair(s), program chair(s), workshop chair, keynote chair…

SBSEG: LOCATIONS

SBSEG: WEEK FORMAT & ACTIVITIES

▶ main track technical sessions

▶ keynotes

Tuesday and Wednesday

▶ panels

▶ tutorials

Monday and Thursday

▶ workshops

SBSEG: PAPER SELECTION

▸ from full papers (14 pages) describing original work

▸ *should present a research work developed to the point of producing original and relevant results, fully analyzed and validated*

▸ *paper's presentation should contain a careful and well-based description of the research, conclusions which are consistent with the obtained results*

▸ submissions in Portuguese or English

▸ double-blind review process with 3-5 reviews by TPC members

▸ accepted papers must be presented by one of the registered authors

▸ selection of best papers

SBSEG: CFP TOPICS

▸ Access control models and mechanisms

▸ Anonymity and privacy

▸ Authentication and identity management

▸ Biometric identification systems and techniques

▸ Computational forensics and criminalistics

▸ Cryptography and cryptanalysis: algorithms, protocols, techniques, and applications

▸ Intellectual property protection and DRM

▸ Secure hardware: RFID, smart cards, secure sensors

▸ Secure Voting systems

▸ Security and privacy in applications (digital TV, e-banking, social networks, smart grids)

▸ Security incidents: prevention, detection, and response

▸ Security in cloud computing

▸ Security in databases

▸ Security in distributed and parallel systems

▸ Security in mobile and embedded systems

▸ Security in networks

▸ Security in operating systems

▸ Security in pervasive computing

▸ Security in the Internet of Things

▸ Security policies, standards, and norms

▸ Software security: development, tests, and certification

▸ System audit and risk analysis

▸ Trust management

SBSEG: MAIN TRACK TECHNICAL SESSIONS (2015)

▸ software security

▸ security in distributed systems

▸ cryptography

▸ post-quantum cryptography

▸ network security

▸ Internet security

▸ authentication and biometry

▸ short papers: network security; cryptography; software security

SBSEG: KEYNOTES

▸ 2008: Gene Tsudik (US), Alfred Menezes (CA), Felix Wu (US)

▸ 2009: Phillip Rogaway (US), Kenneth G. Paterson (UK)

▸ 2010: Pierangela Samarati (IT), Johannes Buchmann (DE)

▸ 2011: Hao Chen (US), Marc Dacier (FR), Marten van Dijk (US), David Chadwick (UK)

▸ 2012: Wenke Lee (US), George Cox (US)

▸ 2013: Matt Bishop (US), George Cox (US), David Ott (US), Fabian Monrose (US)

▸ 2014: J Alex Halderman (US), René Peralta (US), Rodrigo Branco (US), Pascal Urien (FR)

▸ 2015: Nikita Borisov (US), Kirill Levchenko (US)

SBSEG: TUTORIALS

▸ like any half-day tutorial, but…

▸ requires book chapter (around 50 pages)

▸ recent examples (2015-2014)

▸ introduction to crypto for programmers: avoiding incorrect use of cryptography in software systems

▸ security in mobile crowd sensing

▸ efficient and secure implementation of cryptographic algorithms

▸ approaches for email spam detection

▸ intrusion and fault tolerance for storage systems in cloud computing

▸ device fingerprint: concepts and techniques, examples and countermeasures

▸ botnets: characteristics and detection methods via network traffic

▸ security for vehicular networks: innovation and future directions

SBSEG: WORKSHOPS

▸ day-long satellite events which vary in scope and nature

▸ from research work authored by undergraduates, to workshops on some hot subject, such as e-voting, identity management and digital forensics

▸ there is a call for workshop proposals

▸ industrial & corporate forum

SBSEG: VITAL STATS

▸ 2011, Brasília:
19/61 (31%), 7 TS, 6 Tutorials, 3 Workshops

▸ 2012, Curitiba:
22/67 (32%), 7 TS, 4 Tutorials, 3 Workshops

▸ 2013, Manaus:
24/73 (32%), 8 TS, 4 Tutorials, 3 Workshops

▸ 2014, Belo Horizonte:
22/66 (33%), 8 TS, 4 Tutorials, 4 Workshops

▸ 2015, Florianópolis:
23/74 (31%), 10 TS, 4 Tutorials, 3 Workshops

SBSEG VS SBRC AND OTHER EVENTS

▸ SBRC - Brazilian Symposium on Computer Networks and Distributed Systems

▸ annual academic event, around May

▸ larger (700+ attendees), tutorials, workshops, keynotes…

▸ usually attracts papers on security (out of ~60 accepted)

  ▸ 2015: 12

  ▸ 2014: 8

  ▸ 2013: 13

  ▸ 2012: 5

  ▸ 2011: 7

OVERVIEW

▸ CESeg SIG

▸ SBSeg symposium

▸ Cyber security document issued by CESeg

DOCUMENT ON CYBER SECURITY

▸ written in 2014 by Dahab & Nogueira on behalf of CESeg

▸ proposal to participate in a seminar of grand challenges on computer science, promoted by SBC

▸ suggests actions to foster scientific research, technological innovation, and formation of new human resources

DOCUMENT ON CYBER SECURITY: 5 GRAND CHALLENGES

1. secure coding and methodologies for development of secure/cryptographic software

2. tools for architectural analysis of security based on formal methods

3. energy efficiency vs. security (mobility, IoT)

4. hardware-based security (and interfacing with OS, SGX)

5. intrusion resilience - systems that tolerate intrusions maintaining partial functionality

DOCUMENT ON CYBER SECURITY: ACTIONS

▸ specific calls for proposals and research funding tailored to security

▸ add secure coding to CS & EE undergraduate courses

▸ create postgraduate programs focused on security

▸ improve participation government, corporate sectors at SBSeg

▸ closer cooperation with industry, professionals in particular

▸ foster participation on national & international competitions

▸ bring international academic events on security to Brazil

▸ foster cooperation with top security research groups

.inf
INSTITUTO
DE INFORMÁTICA
UFRGS

AN OVERVIEW OF THE
BRAZILIAN ACADEMIC
SECURITY LANDSCAPE
QUESTIONS?