CHITTAYONG (JAO) SURAKITBANHARN

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CURRENT POSITION

Stanford University (USA), Executive Director – Stanford Urban Resilience Initiative (SURI) 2018-present
We explore the frontier of Resilience Science & Engineering, an emerging field which applies engineering analyses to broader questions of social impact and human behavior in the context of natural disasters and extreme events.

EDUCATION

Purdue University, Ph.D. Industrial Engineering 2015
Areas of study: Disaster management, critical infrastructure, human factors, geospatial analysis, govt. policy
Dissertation: "A methodology to engineer government incentive design for subsidized air transportation"
Advisor: Dr. Steven. J Landry

California Polytechnic State University, B.S. Mechanical Engineering 2008

EXPERIENCE

Research Scientist, Purdue University (USA) 2017-2018
Developed and deployed visual analytic software for disaster and emergency decision making.

Research Fellow, Queensland University of Technology (Australia) 2015–2017
Developed emergency communication systems and critical infrastructure policy for regional communities
Taught regional planning practice

Research/Teaching Assistant, Purdue University 2009–2012, 2015
Developed novel air traffic control concepts to increase the resilience of the National Airspace System,
Taught human factors engineering to 90 students per semester

Visiting Researcher, Chulalongkorn University (Thailand) 2014–2015
Researched impacts of SE Asian aviation infrastructure on regional communities

Visiting Researcher, Keio University (Japan) 2012–2014
Researched aviation's role in the 2011 Tohoku Tsunami disaster response

Scientist, Avantium Technologies (The Netherlands) 2009
Led a team to design new testing platforms for biofuel emissions

AWARDS

NSF: Engineering Research Center Planning Grant (Award #1840435) ($100k) 2018-2019
Center for Data for Socio-Physical Extreme Event Resilience (Data-SPEER)

DHS: Maritime Security Research ($51k of $297k) 2018

DHS: VACCINE Tools for Plugfest ($7k of $147k) 2018

UNSA NEXUS: Arequipa Sustainable Viticulture and Enology Center (ASVEC) ($63k of $400k) 2018–2020

DHS: SMART for Augmenting First Responder Situation Awareness ($31k of $500k) 2017–2019

DHS: Improved Disaster Management through Innovative Social Media Analytics ($20k of $1M) 2017–2022

Queensland Government: Advance Queensland Research Fellowship (Declined $180k AUD) 2017
Improving the communication of disaster information in Queensland communities

Australian Government: Endeavour Postdoctoral Research Fellowship ($24.5k AUD) 2015–2016
Optimizing Government Spending for Remote Air Services in Australia and Abroad

TRB: ACRP University Design Competition for Addressing Airport Needs ($5k) 2015
1st Place: Funding Essential Air Service to Small Community airports through Data Driven Decisions

Institute of International Education: Boren Fellowship to Japan ($24k) 2013–2014
Scholarship: The Role of Critical Aviation Infrastructure in the 2011 Tohoku Tsunami Response

Japan Student Service Organization Scholarship: Exchange to Japan (500k JPY) 2012–2013
Scholarship: The Role of Critical Aviation Infrastructure in the 2011 Tohoku Tsunami Response
National Industries for the Severely Handicapped ($30k) 2008
1st Place: National Scholar Award for Workplace Innovation & Design
German Academic Exchange Service: RISE (Declined) 2008

REFEREED ARTICLES

"Cross-referencing social media and public surveillance camera data for disaster response." IEEE International Symposium on Technologies for Homeland Security 2018. (with Yau, C., Wang, G., Chawla, A., Pan, Y., Sun, Z., Yellin, S., Ebert, D.S., Lu, Y., Thiruvathukal, G.)

"Extending air transport demand and population growth studies to regional Australia," *Transport Policy*. Under Review, Submitted 7 July 2018. (with Baker, D.)

"TopoText: Context-Preserving Semantic Exploration Across Multiple Spatial Scales" ACM CHI 2018. Accepted 13 January 2017. (with Zhang, J., Elmqvist, N., Maciejewski, R., Qian, Z., and Ebert, D.S.) Honorable Mention Award.

"A Client-based Visual Analytics Framework for Large Spatiotemporal Data under Architectural Constraints." DSIA: Data Systems for Interactive Analysis 2017. (with Wang, G., Malik, A., Florencio de Queiroz Neto, J., Afzal, A., Chen, S., Wiszowaty, D., and Ebert, D.S.)

"Spatiotemporal Driven Analysis of Law Enforcement Data." VIP: Vis in Practice 2017. (with Wang, G., Akers, A., Florencio de Queiroz Neto, J., and Ebert, D.S.)

"SMART: Social Media Analytics and Reporting Toolkit." VIP: Vis in Practice 2017. (with Zhang, J., Chae, J., and Ebert, D.S.)

"MetricsVis: A Visual Analytics Framework for Performance Evaluation of Law Enforcement Officers." IEEE International Symposium on Technologies for Homeland Security 2017. (with Zhao, J., Malik, A., Xu H., Wang G., Zhang, J., and Ebert D.S.)

"TraSeer: A Visual Analytics Tool for Vessel Movements in the Coastal Areas." IEEE International Symposium on Technologies for Homeland Security 2017. (with Wang, G., Malik, A., Yau C., and Ebert D.S.)

"A formalism for assessing the situation awareness of pilots," *Engineering Psychology and Cognitive Ergonomics*. Volume 6781, pp 572-581, 2011. (with Landry, S.J.)

INVITED TALKS

"Social Media Analytics for Disaster Management," Prairie View A&M Industry Day, Prairie View, TX, USA, 12 April 2018.

"Floods, Tornadoes, and Disaster Resilience," Purdue Policy Research Institute, West Lafayette, IN, USA, 06 November 2017.

"Increasing Situation Awareness through Social Media: The Shift from One-Way Distribution to Two-Way Communication for Emergency and Disaster Information," House of Sweden – Future Incident Scene and Future First Responder, Washington D.C., USA, 03-04 October 2017.

"Soft Mitigation in Areas of Reoccurring Natural Disasters: Floods in Queensland, Australia and the Volcanic Eruptions of Mt. Merapi in Yogyakarta, Indonesia," Indonesian National/Regional Disaster Management Authorities, Yogyakarta, Indonesia, 14 October 2016.

"The Best Ways to Spend Resources for Disaster Management," Guardian Disaster Management User Group Conference, Gympie, Australia, 24 August 2016.

"Novel Subsidy Structures from Remote, Rural, and Regional Airports Outside Australia," Regional Airport Development, Brisbane, Australia, 08 March 2016.

"Funding Essential Air Service to Small Community Airports through Data Driven Decisions," Transportation Research Board, Washington D.C., USA, 17 July 2015.

"Improving Remote Air Transportation Subsidies through Data Driven Decision Making," 9th National Aviation Systems Planning Symposium, Charleston, SC, USA, 17 May 2015.

CONFERENCE PROCEEDINGS

"Improving the Communication of Emergency and Disaster Information Using Visual Analytics." Applied Human Factors and Ergonomics Conference 2017 (with Ebert D.S.)

"A Comparison of an Intensity Control Measure Versus Dynamic density to Capture Complexity Within a Sector." Aviation Technology, Integration, and Operations 2015. (with Surakitbanharn, C.A and Landry, S.J.)

"Understanding the Human Factors Limitations of Automated Conflict Resolution through Air Traffic Controller Solicitation." Applied Human Factors and Ergonomics Conference 2014. (with Dao, A.Q. and Landry, S.J)

"High-Speed Rail and Low Cost Carrier Competition in Japan: the Effects of Air Transport Liberalization on Inter-Modal Transport Systems." Air Transportation Research Society Conference 2014. (with Landry, S.J.)

"An Evaluation of Non-Pareto Optimal Solutions for Automated Weather Conflict Resolution." Asia-Pacific International Symposium on Aerospace Technology 2013. (with Dao, A.Q., Landry, S.J. et al.)

"A Benefit Mechanism Analysis on Government Incentive Design for Remote Airports." Asia Pacific Council on Systems Engineering Conference 2013. (with Aldrich, D.P., Landry, S.J. et al)

"A Methodology in Evaluating the Value of Government Incentives for Remote Airports in the United States." Air Transportation Research Society Conference 2013. (with Aldrich, D.P., Landry, S.J. et al)

"Evaluation of Stream Air Traffic Operations by Adapting Dynamic Density Complexity Measure." Aviation Technology, Integration, and Operations 2012. (with Wei, P., Landry, S.J., and Sun. P)

"Workload evaluation of sectorized air traffic management control and stream management." Integrated Communications Navigation and Surveillance 2012. (with Wei, P., Landry, S.J., and Sun. P)

TEACHING EXPERIENCE

Disaster Resilience Seminar (Stanford)	2018
Regional Planning Practice (QUT)	2016
Work Analysis and Design Lab (Purdue)	2009-2012

SOFTWARE SKILLS

Geospatial: ArcGIS
Statistical: SAS, SPSS, Minitab
Programming/Computational: MATLAB, Visual Basic
Solid modeling: Solidworks, CATIA

FOREIGN LANGUAGES

English: Mother tongue
Thai: fluent
German: conversational
Japanese: basic
French: basic

PROFESSIONAL MEMBERSHIPS

Human Factors and Ergonomics Society (HFES)	2009–
American Institute of Aeronautics and Astronautics (AIAA)	2012–
Air Transport Research Society (ATRS)	2013–
Institute of Electrical and Electronics Engineers (IEEE)	2017–
American Geophysics Union	2018–