SafeAI 2021

The AAAI-21 Workshop on Artificial Intelligence Safety

Feb 8th, 2021
Virtual

Huáscar Espinoza, Commissariat a'l'Energie Atomique, France
Seán Ó hÉigeartaigh, University of Cambridge, UK
Xiaowei Huang, University of Liverpool, UK
José Hernández-Orallo, Universitat Politècnica de València, Spain
Mauricio Castillo-Effen, Lockheed Martin, USA
Xin Cynthia Chen, University of Hong Kong, China
Richard Mallah, Future of Life Institute, USA
John McDermid, University of York, UK

Opening Remarks

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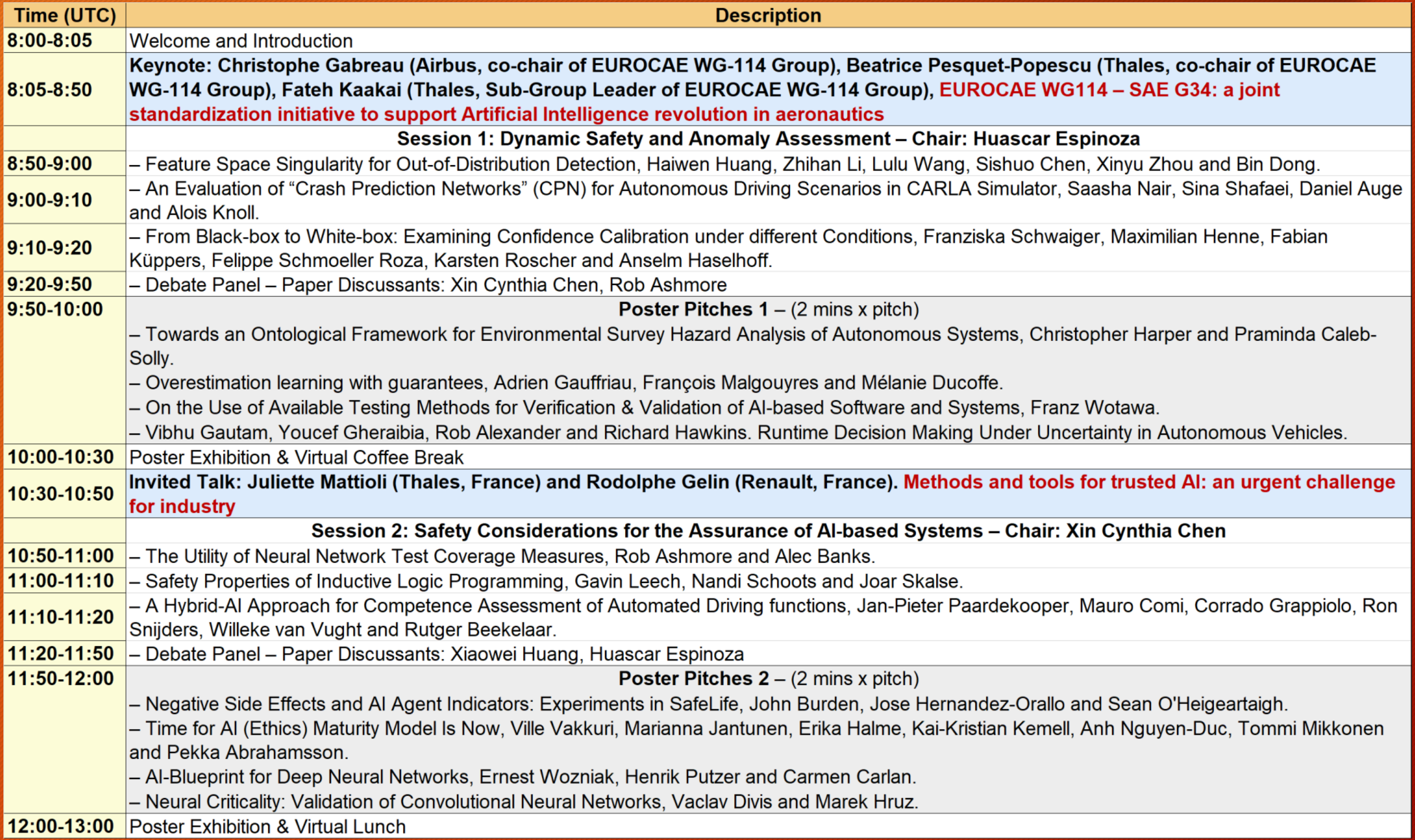
*The main interest of SafeAI 2021 is to explore new ideas on **AI safety** by looking holistically at theoretical and practical, short-term and long-term, perspectives, jointly with the ethical and legal issues, to build trustable intelligent autonomous machines.*

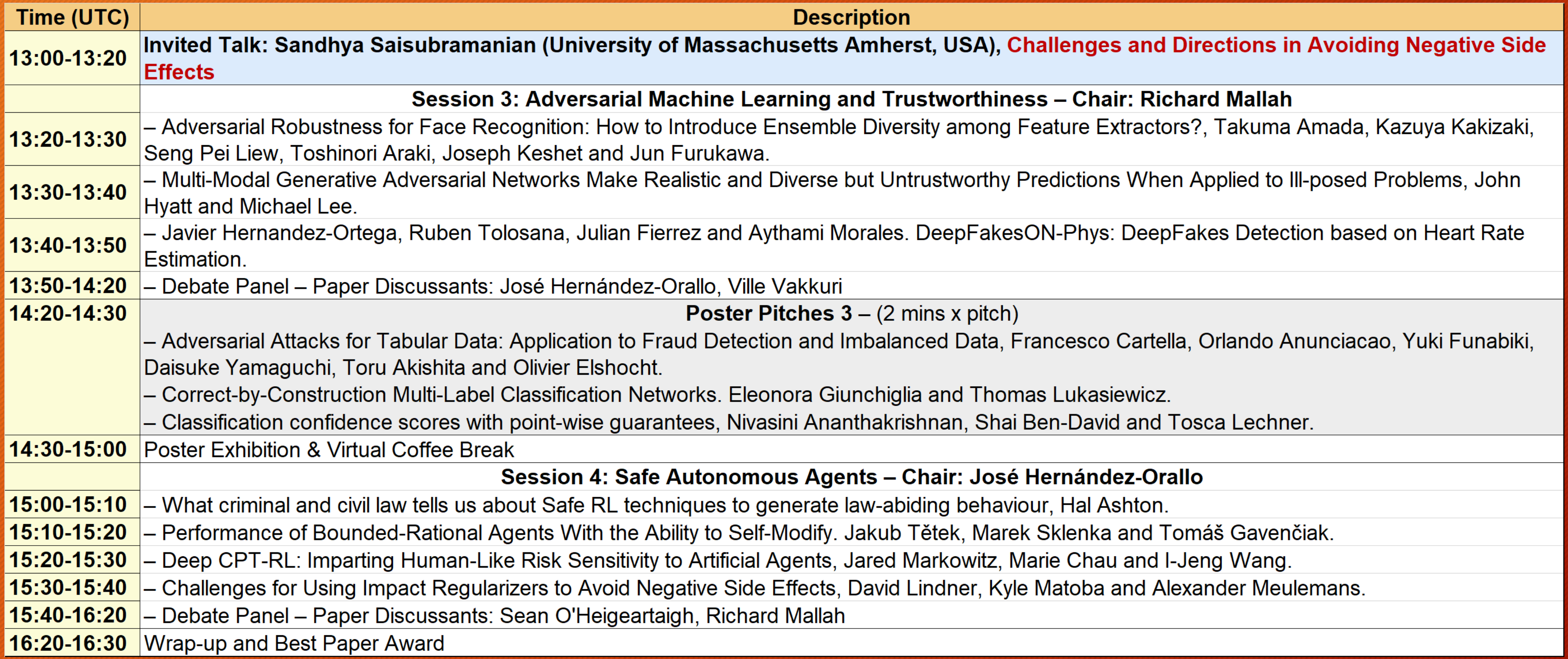
- As SafeAI aims at bringing together multiple perspectives, it’s probably possible to harshly criticise any paper here today… Most likely anyone has missed some important issue…
- So, please do be critical, but temper your criticism with constructive discussions!

Program (Morning)



Time (UTC)	Description
8:00-8:05	Welcome and Introduction
8:05-8:50	**Keynote: Christophe Gabreau (Airbus, co-chair of EUROCAE WG-114 Group), Beatrice Pesquet-Popescu (Thales, co-chair of EUROCAE WG-114 Group), Fateh Kaakai (Thales, Sub-Group Leader of EUROCAE WG-114 Group), EUROCAE WG114 – SAE G34: a joint standardization initiative to support Artificial Intelligence revolution in aeronautics**
	Session 1: Dynamic Safety and Anomaly Assessment – Chair: Huascar Espinoza
8:50-9:00	– Feature Space Singularity for Out-of-Distribution Detection, Haiwen Huang, Zhihan Li, Lulu Wang, Sishuo Chen, Xinyu Zhou and Bin Dong.
9:00-9:10	– An Evaluation of “Crash Prediction Networks” (CPN) for Autonomous Driving Scenarios in CARLA Simulator, Saasha Nair, Sina Shafaei, Daniel Auge and Alois Knoll.
9:10-9:20	– From Black-box to White-box: Examining Confidence Calibration under different Conditions, Franziska Schwaiger, Maximilian Henne, Fabian Küppers, Felippe Schmoeller Roza, Karsten Roscher and Anselm Haselhoff.
9:20-9:50	– Debate Panel – Paper Discussants: Xin Cynthia Chen, Rob Ashmore
9:50-10:00	**Poster Pitches 1** – (2 mins x pitch) – Towards an Ontological Framework for Environmental Survey Hazard Analysis of Autonomous Systems, Christopher Harper and Praminda Caleb-Solly. – Overestimation learning with guarantees, Adrien Gauffriau, François Malgouyres and Mélanie Ducoffe. – On the Use of Available Testing Methods for Verification & Validation of AI-based Software and Systems, Franz Wotawa. – Vibhu Gautam, Youcef Gheraibia, Rob Alexander and Richard Hawkins. Runtime Decision Making Under Uncertainty in Autonomous Vehicles.
10:00-10:30	Poster Exhibition & Virtual Coffee Break
10:30-10:50	**Invited Talk: Juliette Mattioli (Thales, France) and Rodolphe Gelin (Renault, France). Methods and tools for trusted AI: an urgent challenge for industry**
	Session 2: Safety Considerations for the Assurance of AI-based Systems – Chair: Xin Cynthia Chen
10:50-11:00	– The Utility of Neural Network Test Coverage Measures, Rob Ashmore and Alec Banks.
11:00-11:10	– Safety Properties of Inductive Logic Programming, Gavin Leech, Nandi Schoots and Joar Skalse.
11:10-11:20	– A Hybrid-AI Approach for Competence Assessment of Automated Driving functions, Jan-Pieter Paardekooper, Mauro Comi, Corrado Grappiolo, Ron Snijders, Willeke van Vught and Rutger Beekelaar.
11:20-11:50	– Debate Panel – Paper Discussants: Xiaowei Huang, Huascar Espinoza
11:50-12:00	**Poster Pitches 2** – (2 mins x pitch) – Negative Side Effects and AI Agent Indicators: Experiments in SafeLife, John Burden, Jose Hernandez-Orallo and Sean O'Heigeartaigh. – Time for AI (Ethics) Maturity Model Is Now, Ville Vakkuri, Marianna Jantunen, Erika Halme, Kai-Kristian Kemell, Anh Nguyen-Duc, Tommi Mikkonen and Pekka Abrahamsson. – AI-Blueprint for Deep Neural Networks, Ernest Wozniak, Henrik Putzer and Carmen Carlan. – Neural Criticality: Validation of Convolutional Neural Networks, Vaclav Divis and Marek Hruz.
12:00-13:00	Poster Exhibition & Virtual Lunch

Program (Afternoon)



Time (UTC)	Description
13:00-13:20	**Invited Talk: Sandhya Saisubramanian (University of Massachusetts Amherst, USA), Challenges and Directions in Avoiding Negative Side Effects**
	Session 3: Adversarial Machine Learning and Trustworthiness – Chair: Richard Mallah
13:20-13:30	– Adversarial Robustness for Face Recognition: How to Introduce Ensemble Diversity among Feature Extractors?, Takuma Amada, Kazuya Kakizaki, Seng Pei Liew, Toshinori Araki, Joseph Keshet and Jun Furukawa.
13:30-13:40	– Multi-Modal Generative Adversarial Networks Make Realistic and Diverse but Untrustworthy Predictions When Applied to Ill-posed Problems, John Hyatt and Michael Lee.
13:40-13:50	– Javier Hernandez-Ortega, Ruben Tolosana, Julian Fierrez and Aythami Morales. DeepFakesON-Phys: DeepFakes Detection based on Heart Rate Estimation.
13:50-14:20	– Debate Panel – Paper Discussants: José Hernández-Orallo, Ville Vakkuri
14:20-14:30	**Poster Pitches 3** – (2 mins x pitch) – Adversarial Attacks for Tabular Data: Application to Fraud Detection and Imbalanced Data, Francesco Cartella, Orlando Anunciacao, Yuki Funabiki, Daisuke Yamaguchi, Toru Akishita and Olivier Elshocht. – Correct-by-Construction Multi-Label Classification Networks. Eleonora Giunchiglia and Thomas Lukasiewicz. – Classification confidence scores with point-wise guarantees, Nivasini Ananthakrishnan, Shai Ben-David and Tosca Lechner.
14:30-15:00	Poster Exhibition & Virtual Coffee Break
	Session 4: Safe Autonomous Agents – Chair: José Hernández-Orallo
15:00-15:10	– What criminal and civil law tells us about Safe RL techniques to generate law-abiding behaviour, Hal Ashton.
15:10-15:20	– Performance of Bounded-Rational Agents With the Ability to Self-Modify. Jakub Tětek, Marek Sklenka and Tomáš Gavenčiak.
15:20-15:30	– Deep CPT-RL: Imparting Human-Like Risk Sensitivity to Artificial Agents, Jared Markowitz, Marie Chau and I-Jeng Wang.
15:30-15:40	– Challenges for Using Impact Regularizers to Avoid Negative Side Effects, David Lindner, Kyle Matoba and Alexander Meulemans.
15:40-16:20	– Debate Panel – Paper Discussants: Sean O'Heigeartaigh, Richard Mallah
16:20-16:30	Wrap-up and Best Paper Award

Some Additional Information

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- Voting for SafeAI 2021 Best Paper Award:

  www.menti.com – Code: **57 59 18 6**

- Proceedings is freely available at CEUR-WS: http://ceur-ws.org/Vol-2808/

  (URL is available at the SafeAI website)

- Presentations will be available on the website very soon

- We hope you enjoy SafeAI 2021!

Wrap Up

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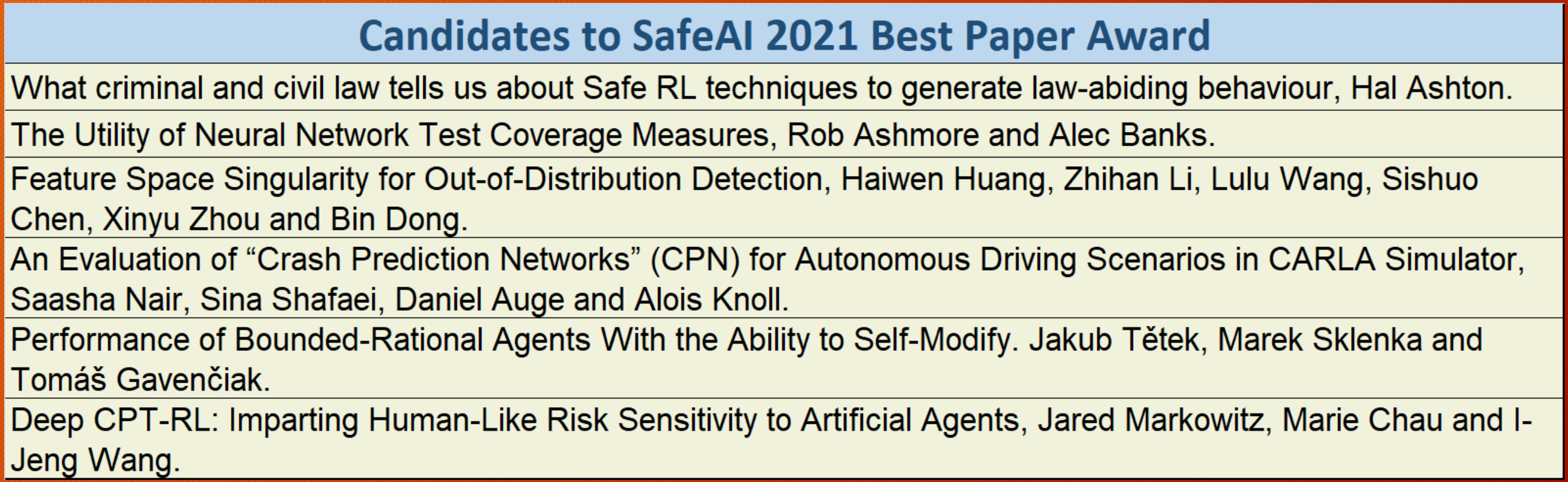

Candidates to SafeAI 2021 Best Paper Award
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- Join the CLAIS (Consortium of the Landscape on AI Safety): www.clais.org