The Molly Problem Public Survey Results (preliminary)



Sample dates: 11-20th October 2020

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The Molly Problem was created by ADA to provide insight on the public expectations for safety critical ethics, behaviour and explainability for AI software used for self-driving vehicles.

This survey was conducted in collaboration with the Technical University of Munich as part of the ITU Focus Group on AI for Autonomous and Assisted Driving (FG-AI4AD) and the AI for Good Global Summit Webinar Series.

For more details please follow the link below;

https://www.itu.int/en/ITU-T/focusgroups/ai4ad/Pages/MollyProblem.aspx

The Molly Problem: Background







Aged between 18 and 73 yrs (mean age of 41 yrs)

Living in rural, city, suburban but mainly urban environments

94% hold a drivers license

Three quarters of respondents were *excited* and *willing* to travel in an automated vehicle.

The Molly Problem: Survey Respondents



- These preliminary survey results are based upon responses obtained between 11-20th October 2020 from 296 respondents (70% male, 25% female);





A young girl called Molly is crossing the road alone and is hit by unoccupied self-driving vehicle.

There are no eye-witnesses.

The Molly Problem for Self-Driving Vehicles







What should happen next?

Respondents have clear expectations for the capability and behaviour of the self-driving software in the case of a pedestrian collision event.







expect the software <u>to be aware</u> of the collision 2% unsure & 1% don't









expect the software to stop at the collision site 4% unsure & 2% don't

The Molly Problem: A young girl called Molly is crossing the road alone and is hit by unoccupied selfdriving vehicle. There are no eye-witnesses. What should happen next?







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expect the software <u>to indicate a hazard</u> to other road users 2% unsure & 1% don't









expect the software to alert emergency services 5% unsure & 1% don't

The Molly Problem: A young girl called Molly is crossing the road alone and is hit by unoccupied selfdriving vehicle. There are no eye-witnesses. What should happen next?







What should happen next?

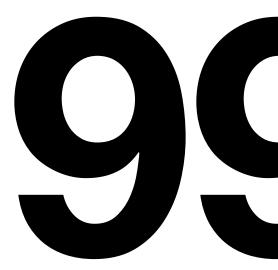
In addition to post-collision behaviour respondents were asked about the information recall capabilities of the self-driving software.

The overwhelming majority had strong and clear expectations for the development of explainable AI for self-driving software.









expect the software to recall the *time* of the collision 1% don't

The Molly Problem: A young girl called Molly is crossing the road alone and is hit by unoccupied selfdriving vehicle. There are no eye-witnesses. What should happen next?







expect the software to recall the *location* of the collision 1% don't







expect the software to recall when the collision risk was identified 6% unsure 1% don't









expect the software to recall *if* Molly was detected 3% unsure 1% don't









expect the software to recall <u>when</u> Molly was detected 2% unsure 2% don't









expect the software to recall *if* Molly was detected as a *human* 6% unsure 3% don't









expect the software to recall <u>when</u> Molly was detected as a <u>human</u> 7% unsure 3% don't







expect the software to recall <u>whether</u> mitigating action was taken 1% unsure 1% don't









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expect the software to recall <u>when</u> mitigating action was taken 2% unsure 1% don't







expect the software to recall what mitigating action was taken 3% unsure 1% don't









What should happen next?

were then asked to consider two extension scenarios;

- Should recall capabilities be available for near-miss events?
- What should happen if *recall capability is unavailable*?

The Molly Problem: A young girl called Molly is crossing the road alone and is hit by unoccupied selfdriving vehicle. There are no eye-witnesses.



Having indicated the preference for information recall, respondents







expect similar recall abilities for <u>near-miss events</u> 5% unsure 7% don't







expect <u>driving</u> to be <u>prohibited</u> for software <u>without recall capability</u> 15% unsure 12% don't







The Molly Problem preliminary survey results set clear public expectations for <u>ethical post-collision behaviour</u> and support for the adoption of <u>explainable Al</u> approaches for self-driving software.

<u>Ten key criteria</u> for explainability were supported with the expectation of their <u>recall</u> capability in both <u>collision and near-miss</u> events.

These findings should be considered by self-driving <u>developers, insurers,</u> <u>standards bodies and regulators</u>. In December 2020 the ITU FG-AI4AD members will decide whether to adopt the ten key criteria as requirements for data standardisation used in both recall and continual monitoring.

The Molly Problem: Preliminary Conclusion









THANK YOU. STAY SAFE. STAY HEALTHY.





Al for Autonomous and Assisted Driving AN ITU FOCUS GROUP

- Chair ITU FG-AI4AD Bryn Balcombe: <u>bryn@ada.ngo</u>
 - General mailing list: <u>fgai4ad@lists.itu.int</u>
 - Dedicated secretariat email: <u>tsbfgai4ad@itu.int</u>
- Dedicated webpage: www.itu.int/en/ITU-T/focusgroups/ai4ad



