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Introspective Environment Modeling

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## Introspective Environment Modeling

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[Sanjit A. Seshia](#). **Introspective Environment Modeling**. In *19th International Conference on Runtime Verification (RV)*, pp. 15–26, October 2019.

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### Abstract

Autonomous systems often operate in complex environments which can be extremely difficult to model manually at design time. The set of agents and objects in the environment can be hard to predict, let alone their behavior. We present the idea of introspective environment modeling, in which one algorithmically synthesizes, by introspecting on the system, assumptions on the environment under which the system can guarantee correct operation and which can be efficiently monitored at run time. We formalize the problem, illustrate it with examples, and describe an approach to solving a simplified version of the problem in the context of temporal logic planning. We conclude with an outlook to future work.

### BibTeX

```
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  author = {Sanjit A. Seshia},  
  title = {Introspective Environment Modeling},  
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  abstract = {Autonomous systems often operate in complex environments which can be extremely difficult to model manually at design time.  
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