Lina: An EDSL for Threat Analysis

- Embedded Domain Specific Functional Programming Languages

  - Host Language: Haskell

- Compositional Attack Tree Specification Language

- Automated Reasoning about Attack Trees using Maude and SMT

- Open Source and Available on Github: https://github.com/MonoidalAttackTrees/Lina

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```haskell
import Lina.AttackTree

vehicle_attack :: APAttackTree Double String
vehicle_attack = start_PAT $
  or_node "Autonomous Vehicle Attack"
    (seq_node "External Sensor Attack"
      (base_wa 0.2 "Modify Street Signs to Cause Wreck")
      (and_node "Social Engineering Attack"
        (base_wa 0.6 "Pose as Mechanic")
        (base_wa 0.1 "Install Malware")))
    (seq_node "Over Night Attack"
      (base_wa 0.05 "Find Address where Car is Stored")
      (seq_node "Compromise Vehicle"
        (or_node "Break In"
          (base_wa 0.8 "Break Window")
          (base_wa 0.5 "Disable Door Alarm/Locks"))
        (base_wa 0.1 "Install Malware")))
```