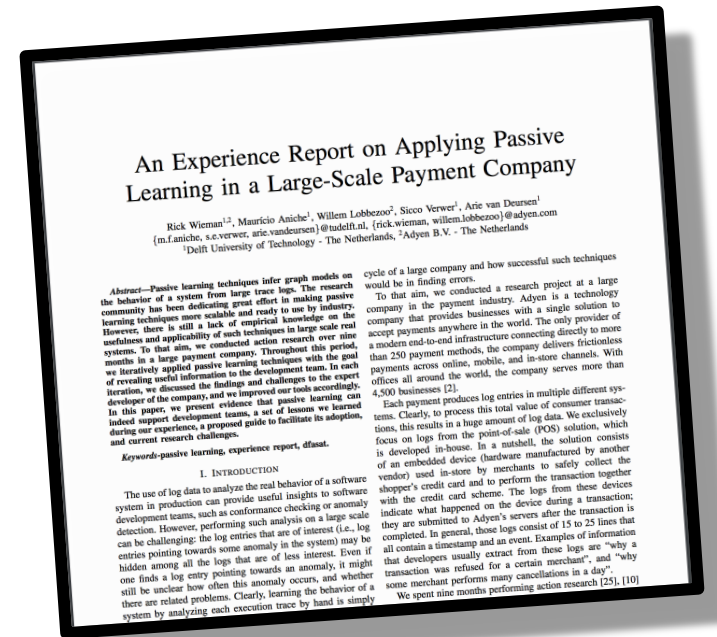
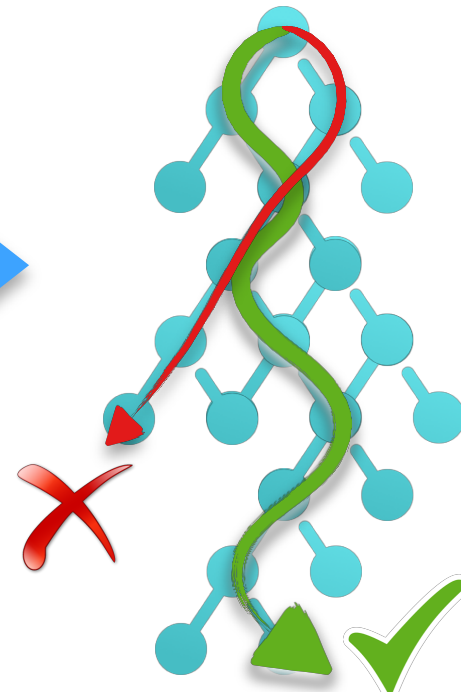
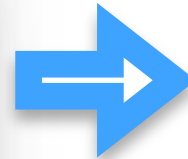


Passive learning

Identifying system *behavior* from observations, and representing it in the *smallest* possible model.

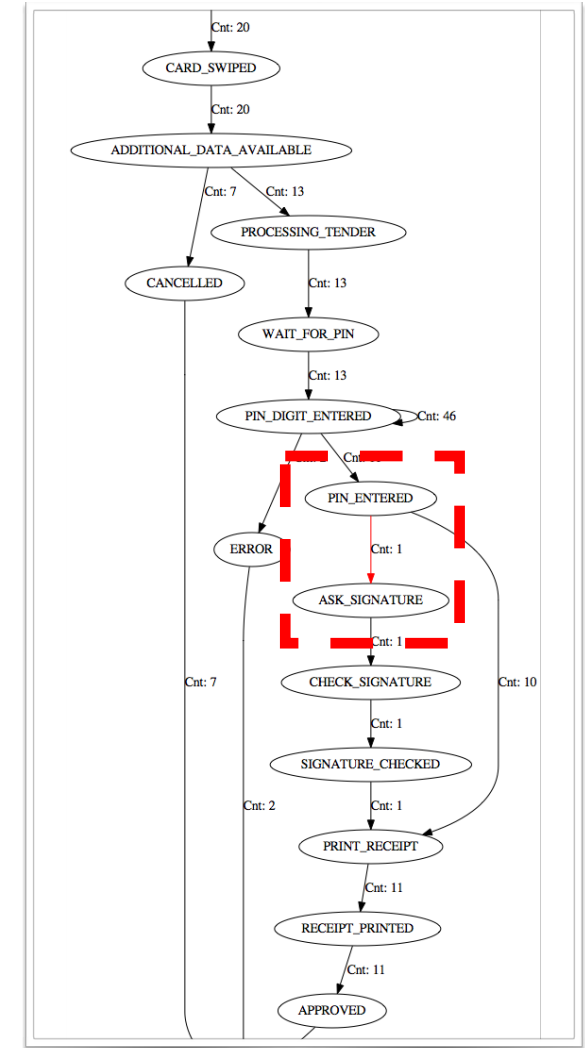
```
20170101160001 Adyen version: *****
20170101160002 Starting TX/amt=10001/currency=978
20170101160003 Starting EMV
20170101160004 EMV started
20170101160005 Magswipe opened
20170101160006 CTLS started
20170101160007 Transaction initialised
20170101160008 Run TX as EMV transaction
20170101160009 Application selected app:*****
20170101160010 read_application_data succeeded
20170101160011 data_authentication succeeded
20170101160012 validate 0
20170101160013 DCC rejected
20170101160014 terminal_risk_management succeeded
20170101160015 verify_card_holder succeeded
20170101160016 generate_first_ac succeeded
20170101160017 Authorizing online
20170101160018 Data returned by the host succeeded
20170101160019 Transaction authorized by card
20170101160020 Approved receipt printed
20170101160021 pos_result_code:APPROVED
20170101160022 Final status: Approved
```



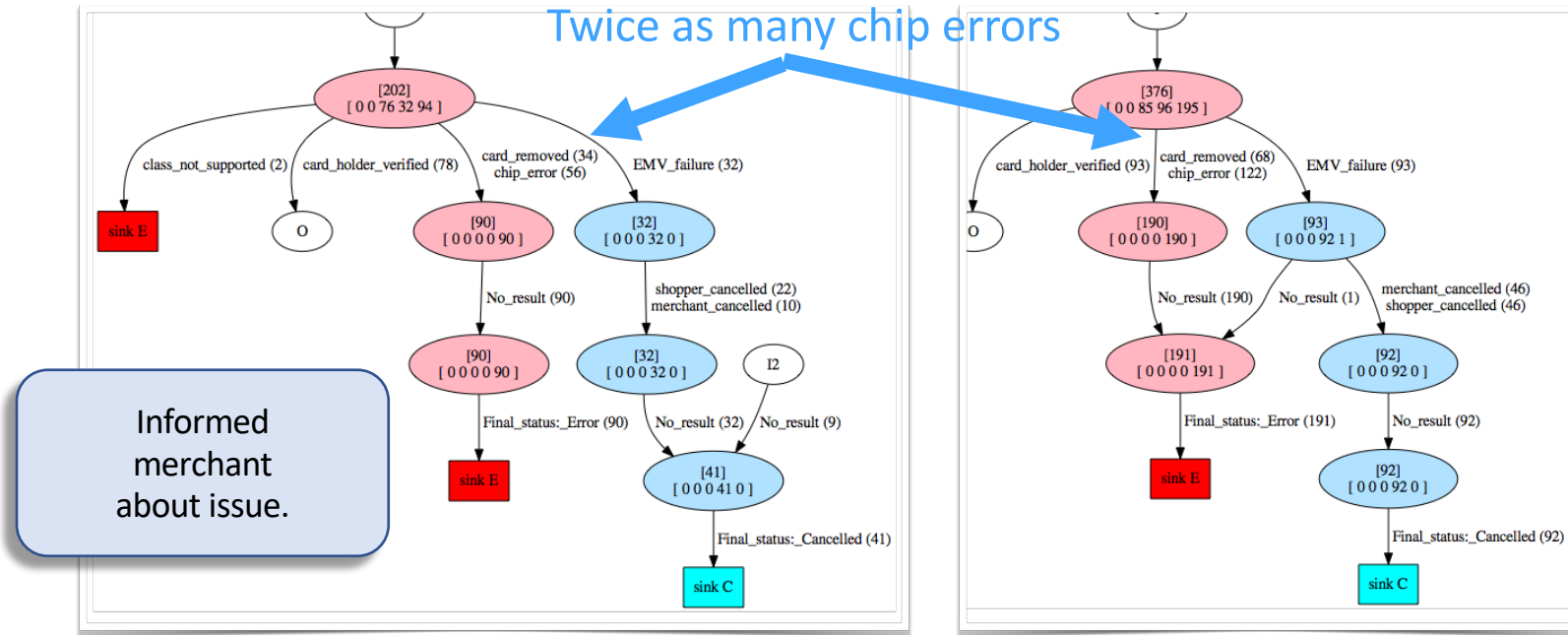
Rick Wieman, Maurício Aniche, Willem Lobbezo, Sicco Verwer and Arie van Deursen.
An Experience Report on Applying Passive Learning in a Large-Scale Payment Company. ICSME Industry Track, 2017

Use Inferred Models to Analyze: *Bugs in Test Phase*

- Terminal asked for PIN
- AND asked for signature
- Domain expert noted this unwanted behavior in inferred model.
- Fixed before it went into production



Use Inferred Models to Analyze: *Differences Between Card Brands*



Use Inferred Models to Analyze: *Time out problems*

