

Unobtrusive Authentication in Mobile Security

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The big picture

- What is Mobile Security?
- How can mobile security get better?



Outline

- 1 Background
- 2 Preprocessing the data
- 3 Extracting Individual Gait
- 4 Analyzing the extracted Gait data
- 5 Results

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 - Why is there a need for more security?

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Why is there a need for more Security?

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Developmental plasticity in EC

Most EC systems have no (or trivial) developmental processes.

- Therefore can't have developmental plasticity

There are important exceptions. In GP, e.g.:

- Cellular encoding
- Many grammar-based systems
- DTAG3P

These remain, however, the exception rather than the rule.

N-gram GP has natural developmental process, so a good candidate for adding developmental plasticity.

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Conclusions

- Added developmental plasticity to N-gram GP using Incremental Fitness-based Development (IFD).
- IFD consistently improved N-gram GP performance on suite of test problems.
- “Knocking out” IFD shows it’s valuable in all phases, even if it wasn’t used earlier in a run.
- IFD generates more complex, less converged probability tables.
- IFD generates more modules/loops & uses more low-probability paths.
- Currently exploring applications to dynamic environments.

Thanks!

Thank you for your time and attention!

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Questions?

References



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See the GECCO '09 paper for additional references.