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Dear President Feeley and esteemed members of the Jury,

Thank you for your highly constructive feedback on my Master's thesis, originally submitted for review on the 31st of August, 2019.

In response to your written comments dated the 5th of November, 2019 and after close consultation with my advisors, I am pleased to enclose a new manuscript, with the following revisions:

- Expanded experimental validation (Chapter 4)
  - Clearly separate our contribution (§4.2) from prior work (§4.1)
  - Comparison of adversarial efficiency with random baseline
  - Formalized problem statement and proposed approach
  - Visual aides demonstrating adversarial attack
  - Validate code samples to ensure compilation
- Minor DSL updates (Chapter 3)
  - Clarify where our DSL falls on the Chomsky hierarchy (§3.6)
  - Kotlin∇ implements *symbolic differentiation* (§3.17)
  - Add support for heterogenously ranked expressions (Tab. 3.2)
  - Improve notation for type-level arithmetic (§3.8)
- Additional context and discussion of prior work (Chapters 1-5)
  - De-emphasize the connection to robotics development
  - Fix clerical and grammatical mistakes
  - Add missing citations to relevant literature
  - Update code samples to fix syntactical errors
  - Added internal links and references

- Updated formal grammar and matrix notation (Appendix A)
  - Include Backus-Naur form grammar (§A.1)
  - Describe polynomial regression (§A.3)

I wish to thank my advisors, Dr. Paull and Dr. Famelis, whose guidance and encouragement have been integral to the construction of this thesis.

Thank you once again for your time and consideration.

Sincerely,

Breandan Considine

P.S. For a complete list of revisions, please refer to the following URL: `https://github.com/breandan/kotlingrad/compare/master@%7B2019-08-31%7D...master`.

encl: Revised Thesis, *Programming Tools for Intelligent Systems*