SCHOOL OF COMPUTER SCIENCE
PHD STUDENT PROGRESS REPORT FORM

Note: The activities reported here cover the period starting from your admission day to the Ph.D. comprehensive exam day.

Name: Breandan Considine
Supervisor(s): Jin Guo, Xujie Si
Date of Admission: Mar. 20, 2019 **Admitted to Ph.D. 1 or Ph.D. 2**

1. **Courses:**
   (a) **Courses Taken and Grades:**
      i. COMP 762 - ML & NLP Methods for Software Engineering, A
      ii. COMP 599 - Mathematical Techniques for Machine Learning, F
      iii. COMP 766 - Graph Representation Learning, A
   (b) **Courses Audited:** N/A
   (c) **Courses TA'd:**
      i. IFT 6759 - Projets Avancés en Apprentissage Automatique (2021)
      ii. COMP 598 - Software Engineering for Building Intelligent Systems (2020)
      iii. IFT 6759 - Projets Avancés en Apprentissage Automatique (2020)
   (d) **Courses Taught:** N/A
2. **Publications (indicate if they are refereed):**
   (a) **Journals:** N/A
      i. ICML 2019 (refereed, extracurricular) - Multi-objective training of Generative Adversarial Networks with multiple discriminators
   (b) **Conferences:**
      i. ICLR 2021 (refereed, extracurricular) - gradSim: Differentiable simulation for system identification and visuomotor control
   (c) **Other:**
      i. PTML Workshop at NeurIPS 2019 (refereed, extracurricular) - Kotlin∇: A shape-safe DSL for differentiable programming
      ii. Master's Thesis (refereed, extracurricular) - Programming tools for intelligent systems
3. **Software or System Built:**
   (a) Code Search Tools: Tools and experiments for information retrieval on code
   (b) Markovian: A DSL for Automatic integration and probabilistic programming
   (c) Kaliningraph: A Type Family of Algebraic Graphs
   (d) Kotlin∇: Shape-Safe Symbolic Differentiation with Algebraic Data Types (extracurricular)

(e) SourceJump: Find contextually similar OSS code without leaving the IDE

(f) TraceJump: Annotating screenshots with trace links

(g) Pantograph: Runtime accessible IR for reified computation graphs

(h) TraceLink: Trace link prediction from code to documentation

(i) GymPC: Reinforcement learning environment for command line interactions

4. **Talks Given at McGill or Elsewhere, Workshops Attended, Research Visits:**

   (a) PTML Workshop at NeurIPS 2019 (extracurricular) - Kotlin∇

   (b) KotlinConf 2019 (extracurricular) - Kotlin∇

   (c) Symposium Intelligence Artificielle Montréal 2019 (extracurricular) - Kotlin∇

   (d) Oregon Programming Language Summer School 2019 (extracurricular) - Kotlin∇

   (e) Mila Computer Calculus RG 2021 (extracurricular) - Organizer

   (f) Machine Learning for Code RG 2021 (extracurricular) - Co-Organizer

5. **Prizes and Awards:**

   (a) McGill School of Computer Science Teaching Award, Fall 2020

   (b) McGill University, Differential Fee Waiver (2019-2022) - $12,000 CAD per year

   (c) Oregon Programming Languages Summer School Fellowship (2019) - $994 USD

6. **Committee Service (if relevant to research):**

   (a) NeurIPS 2021 Workshop - AIPLANS: Advances in Programming Languages and Neurosymbolic Systems

   (b) ICLR 2021 Workshop (extracurricular) - Beyond static papers: Rethinking how we share scientific understanding in ML

7. **Literature Review (must be attached):**

   Syllabus attached.

Overall Performance: **satisfactory**_____, **NOT satisfactory**_____

Comments of the Evaluation Committee:

Chair of the Evaluation Committee:

Date: