

# Atticus G. Harrigan

PH.D. CANDIDATE

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## Education

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### University of Alberta

Edmonton, Alberta

PH.D. CANDIDATE IN LINGUISTICS

PRESENT

I study corpus and quantitative linguistics. Working with Indigenous languages of Canada, specifically Nêhiyawêwin (Plains Cree), my dissertation looks at how mood-like constructions can be predicted from morphological, syntactic, and semantic features.

Dissertation title: A Quantitative Account of Plains Cree Order: Using mixed-effects modeling to uncover syntactic, semantic, and morphological motivations in Plains Cree

### Linguistics Society of America Summer Institute

Lexington, Kentucky

UNIVERSITY OF KENTUCKY

2017

I attended the 2017 Summer Institute in Linguistics at the University of Kentucky. I took course work in Construction Grammar, Computational Linguistics, Sign Language Linguistics, and Forensic Linguistics.

### University of Alberta

Edmonton, Alberta

B.A. (HONS.) IN LINGUISTICS

2015

I studied linguistics focusing on language sustainability and phonetics.

Thesis title: Reduction in Plains Cree

### MacEwan University

Edmonton, Alberta

DIPLOMA OF PROFESSIONAL WRITING

2012

I studied professional writing, including technical writing and rhetoric.

## Skills

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### Programming Languages Software

Python, Finite State Machines, R, LaTeX, Unix, Awk, Bash, SQL

English (Native), Nêhiyawêwin (Reading, Writing, Some Spoken), Latin (Reading, Writing)

Adobe Creative Suite, AntConc, Audacity, ELAN, macOS, Microsoft Office, Praat, RStudio, Windows

## Selected Work Experience

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### Laboratory Manager

UNIVERSITY OF ALBERTA

Sept. 2015 – PRESENT

I manage the storage and use of laboratory equipment; coordinate and schedule recordings and other research activities with partner Indigenous communities; manage, oversee, and train undergraduate annotators; and participate in recording activities for the Alberta Language Technology Laboratory (ALTLab).

### Indigenous Language Analyst

ALBERTA EDUCATION

Nov. 2018 – May 2019

In working for the First Nations, Métis, and Inuit Education Directorate, I provided research expertise in the field of Indigenous languages. Among other responsibilities, I generated reports regarding the status of Albertan languages, undertook jurisdictional surveys for language policy and planning, supported the creation, drafting and administering of grant programs, and performed analyses of quantitative and qualitative data using a range of techniques.

## Research Intern

ALBERTA EDUCATION

Feb. 2018 – Aug. 2018

I provided research and linguistic expertise on Indigenous language pedagogy and policy, with a particular focus on the creation of immersion programming. I was an integral part of developing grant programs and documents, briefing notes, literature reviews, and other reports to be used both internally and externally.

## Research Assistant

UNIVERSITY OF ALBERTA

May 2017 – August 2017

I was a research assistant for Dr. Jordan Lachler's *Responding to the Call: Supporting Indigenous Language Sustainability in Alberta* project.

## Research Assistant

UNIVERSITY OF ALBERTA

Oct. 2014 – September 2015

I participated in recording, annotation, and other activities in relation to the production of computational tools for Indigenous language learning as part of the SSHRC funded 21<sup>st</sup> Century Tools for Indigenous Languages project.

## Teaching Experience

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### Principal Instructor

UNIVERSITY OF ALBERTA

Winter 2021, Spring 2021,  
Summer 2021, Fall 2021

INT D 318—Technologies for Endangered Language Documentation

### Principal Instructor

UNIVERSITY OF ALBERTA

Summer 2020

LING 101—Introduction to Linguistic Analysis

### Principal Instructor

UNIVERSITY OF ALBERTA

Summer 2019

INT D 318—Technologies for Endangered Language Documentation (Co-taught with Ashleigh Surma)

### Teaching Assistant

UNIVERSITY OF ALBERTA

Winter 2017

LING 309—Syntax and Semantics

### Teaching Assistant

UNIVERSITY OF ALBERTA

Winter 2017

LING 308—Morphology and the Lexicon

### Teaching Assistant

UNIVERSITY OF ALBERTA

Fall 2016

LING 101—Introduction to Linguistics

### Intern/Teaching Assistant

CANADIAN INDIGENOUS LANGUAGE AND LITERACY DEVELOPMENT INSTITUTE

Fall 2014

LING 211—Phonetics of Indigenous Languages in Maskwacîs, AB.

### Intern/Teaching Assistant

CANADIAN INDIGENOUS LANGUAGE AND LITERACY DEVELOPMENT INSTITUTE

Summer 2014

LING 212—Morphosyntax of Indigenous Languages

## **Publications**

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### **Refereed Journal Articles**

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#### **Learning from the Computational Modelling of Plains Cree Verbs**

*Harrigan, A. G., Schmirler, K.,  
Arppe, A., Antonsen, L.,  
Trosterud, T., Wolvengrey, A.*  
2017

MORPHOLOGY, 27(4) 65-98

Role: I helped build the underlying model, co-developed the research question, and was the primary writer.

### **Refereed Book Chapters**

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#### **Leveraging Majority Language Resources for Plains Cree Semantic Classification**

*Harrigan, A. G., Arppe, A.*

IN MACAULAY M. & NOODIN M. (EDS.) *Papers of the Fifty-Second Algonquian Conference*. MICHIGAN STATE UNIVERSITY PRESS

*In Press*

Role: I helped build and test the underlying computational model.

#### **A Morphosyntactically Tagged Corpus for Plains Cree**

*Arppe, A., Schmirler, K.,  
Harrigan, A. G., Wolvengrey, A.*

IN MACAULAY M. & NOODIN M. (EDS.) *Papers of the Forty-Ninth Algonquian Conference* (PP. 1-16). MICHIGAN STATE UNIVERSITY PRESS

2020

Role: I helped build and test the underlying computational model.

#### **Plains Cree Verbal Derivational Morphology: A Corpus Investigation**

*Schmirler, K., Harrigan, A. G.,  
Arppe, A., Wolvengrey, A.*

IN MACAULAY M. & NOODIN M. (EDS.) *Papers of the Forty-Eighth Algonquian Conference* (PP. 239-254). MICHIGAN STATE UNIVERSITY PRESS

2019

Role: I helped build and test the inflectional model the derivational computational model is based upon.

#### **Toward a Detailed Plains Cree VAI Paradigm**

*Harrigan, A. G., Arppe, A.,  
Wolvengrey, A.*

IN MACAULAY M. & NOODIN M. (EDS.) *Papers of the Forty-Eighth Algonquian Conference* (PP. 129-146). MICHIGAN STATE UNIVERSITY PRESS

2017

Role: I developed the main research question, analyzed qualitative data, and was the primary writer.

### **Refereed Conference Proceedings**

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#### **Leveraging English Word Embeddings for Semi-Automatic Semantic Classification in Nêhiyawêwin (Plains Cree)**

*Harrigan A. G., Arppe, A.*

IN *Proceedings of the First Workshop on Natural Language Processing for Indigenous Languages of the Americas*, (PP. 113-121)

2021

Role: I developed the methodology, analyzed the data, and was the main author.

## **The More Detail, the Better? – Investigating the Effects of Semantic Ontology Specificity on Vector Semantic Classification with a Plains Cree / nêhiyawêwin Dictionary**

Dacanay, D. B., **Harrigan A. G.**,  
Wolvengrey, A., Arppe, A.

IN *Proceedings of the First Workshop on Natural Language Processing for Indigenous Languages of the Americas*, (PP. 143-152)

2021

Role: I wrote the underlying script used in compiling sentence vectors and helped develop research methodology.

## **Computational Analysis versus Human Intuition: A Critical Comparison of Vector Semantics with Manual Semantic Classification in the Context of Plains Cree**

Dacanay, D., **Harrigan A. G.**,  
Arppe, A.

IN *Proceedings of the 4th Workshop on the Use of Computational Methods in the Study of Endangered Languages*, 1, 33-43

2021

Role: I wrote the underlying script used in compiling sentence vectors and helped develop research methodology.

## **Design and Evaluation of a Smartphone Keyboard for Plains Cree Syllabics**

Santos E., **Harrigan A. G.**

IN *Proceedings of the 1st Joint Workshop on Spoken Language Technologies for Under-resourced languages (SLTU) and Collaboration and Computing for Under-Resourced Languages (CCURL)*, 88-96

2020

Role: I designed experiments, ran qualitative and quantitative analyses, and was co-writer.

## **A Preliminary Plains Cree Speech Synthesizer**

**Harrigan, A.**, Mills, T., Arppe, A.

IN *Proceedings of the 3rd Workshop on the Use of Computational Methods in the Study of Endangered Languages*, 1(1) 64-73

2019

Role: I built the synthesized voice, devised testing procedures, ran participants, analyzed data, and was the main author.

## **Refereed Extended Abstracts**

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### **Vowel Spaces and Reduction in Plains Cree**

**Harrigan, A.**, Tucker B.

JOURNAL OF THE CANADIAN ACOUSTICAL ASSOCIATION, 43(03)

2015

Role: I developed the research questions, formulated test procedures, analyzed qualitative and quantitative data, and was the main author.

## **Publications in Preparation**

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### **Plains Cree Verb Construction Choice—a spectrum of types and degrees of alternation/interchangeability**

**Harrigan, A. G.**, Arppe, A.

IN PREPARATION FOR SUBMISSION TO *Linguistics Vanguard*

Role: I originated research questions, am developing experimental design, am running analyses, and will be the main author.

## **Software/Corpora**

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[HTTPS://WWW.ALTLAB.DEV/MASKWACIS/](https://www.altlab.dev/maskwacis/)

Mary Jean Littlechild, Louise Wildcat, Jerry Roastng, Harley Simon, Annette Lee, Arlene Makinaw, Rosie Rowan, Rose Makinaw, Kisikaw, Betty Simon, Brian Lightning, Brian Lee, Linda Oldpan, Miriam Buffalo, Debora Young, Ivy Raine, Paula Makinaw, Norma Linda Saddleback, Renee Makinaw, **Atticus Harrigan**, Katherine Schmirler, Dustn Bowers, Megan Bontogon, Lex Giesbrecht, Patricia Johnson, Timothy Mills, Jordan Lachler, Antti Arppe

Role: I recorded a plurality of material, developed recording frameworks, and helped edit and transcribe materials.

## Plains Cree FST

[HTTPS://GITHUB.COM/GIELLALT/LANG-CRK](https://github.com/GIELLALT/LANG-CRK)

Antti Arppe, **Atticus Harrigan**, Katherine Schmirler, Eddie Antonio Santos, Lene Antonsen, Trond Trosterud

Role: I helped write the verbal morphology, assisted with writing the nominal morphology, and consulted on the morphophonological rules.

## Ahenakew-Wolfart Corpus

NÊHIYAWÊWIN CORPUS OF 142,192 TOKENS

Antti Arppe, Katherine Schmirler, **Atticus Harrigan**

Role: I hand annotated and verified entries in the corpus for morphosyntactic features (responsible for 25% of material).

## Honors & Awards

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2019	Alberta Graduate Excellence Scholarship	\$12,000
2017	President's Doctoral Prize of Distinction	\$27,000
2017	SSHRC Doctoral Fellowship	\$80,000
2015	Joseph Armand Bombardier Canada Graduate Scholarship—Master's	\$17,500
2015	Walter H. Johns Graduate Fellowship	\$5,700
2014	Roger S. Smith Undergraduate Researcher Award	\$5,000
2010-2013	Jason Lang Scholarship	\$1,000 (x3)
2013	KIAS <i>Tomorrow's Ideas, Now</i> Presentation Award	\$120
2009	Alexander Rutherford Scholarship for Academic Excellence	\$2,500
2009	Pezer Construction Scholarship for Excellence in Communication Technology Studies	\$1,000

## Conference Experience

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### Organization

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#### 4th Workshop on the Use of Computational Methods in the Study of Endangered Languages

*University of Alberta*

I am on the organizing committee for the 4th Workshop on the Use of Computational Methods in the Study of Endangered Languages. In addition to serving as review chair of the community-track stream of submissions, I am involved in broad planning activities and maintain the conference website.

March 2021

## 50th Algonquian Conference

I co-organized the 50th Algonquian Conference. I organized volunteers, scouted and booked venue space, reviewed abstracts, helped run sessions and daily activities, and communicated with prospective participants.

October 2018

*University of Alberta*

## Participation

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### **Towards a Morphologically Intelligent and User-friendly On-line Dictionary of Plains Cree**

52ND ALGONQUIAN CONFERENCE

October 2020

*Arppe, A., Santos E. A., Yan, M.,  
Harrigan, A. G., Schmirler, K.,  
Amoh K., Wolvengrey, A.  
University of Wisconsin-Madison  
(online)*

### **Leveraging English Translations for an Automatic Semantic Classification of Plains Cree Verbs and Nouns**

52ND ALGONQUIAN CONFERENCE

October 2020

*Harrigan, A. G., Arppe, A.  
University of Wisconsin-Madison  
(online)*

### **Automatic Semantic Classification of Plains Cree Verbs**

51ST ALGONQUIAN CONFERENCE

October 2019

*Harrigan, A. G., Arppe, A.  
Montreal, QC, Canada*

### **Towards a Morphologically Intelligent On-line Dictionary of Plains Cree**

51ST ALGONQUIAN CONFERENCE

October 2019

*Arppe, A., Santos E., Harrigan, A.,  
Schmirler, K., Wolvengrey, A.  
Montreal, QC, Canada*

### **Subverting the Ideology of Standardization with Language Technology**

6TH INTERNATIONAL CONFERENCE ON LANGUAGE DOCUMENTATION AND CONSERVATION

February-March 2019

*Harrigan, A. G., Lachler, J.,  
Arppe, A.  
Honolulu, HI, USA*

### **A Preliminary Plains Cree Speech Synthesizer**

3RD WORKSHOP ON THE USE OF COMPUTATIONAL METHODS IN THE STUDY OF ENDANGERED LANGUAGES

February 2019

*Harrigan, A. G., Mills, T., Arppe, A.  
Honolulu, HI, USA*

### **A Preliminary Plains Cree Speech Synthesizer**

50TH ALGONQUIAN CONFERENCE

October 2018

*Harrigan, A. G., Mills, T.  
Edmonton, AB, Canada*

### **Long-term Dependencies in Plains Cree**

11TH INTERNATIONAL CONFERENCE ON THE MENTAL LEXICON

September 2018

*Harrigan, A. G., Arppe, A.,  
Schmirler, K.  
Edmonton, AB, Canada*

### **A Morphosyntactically Tagged Corpus for Plains Cree**

49TH ALGONQUIAN CONFERENCE

October 2017

*Arppe, A., Schmirler, K.,  
Harrigan, A. G., Wolvengrey, A.  
Montreal, QC, Canada*

## **Conjunct(ion) Junct(ion): what is your function?**

49TH ALGONQUIAN CONFERENCE  
October 2017

*Harrigan, A. G., Arppe, A.  
Montreal, QC, Canada*

## **A Morphologically Tagged Corpus for Plains Cree**

PRAIRIE WORKSHOP ON LINGUISTICS IV  
March 2017

*Schmirler, K., Harrigan, A. G.,  
Arppe, A.  
Saskatoon, SK, Canada*

## **Addressing the Paradox of Authenticity: The Emergence of Pluricentric Written Languages for Haida and Plains Cree**

115TH AMERICAN ANTHROPOLOGICAL ASSOCIATION ANNUAL MEETING  
November 2016

*Lachler, J., Harrigan, A.,  
Bontogon, M.  
Minneapolis, MI, USA*

## **Lexical Subtypes in a Plains Cree Corpus**

48TH ALGONQUIAN CONFERENCE  
October 2016

*Harrigan, A. G., Schmirler, K.,  
Arppe, A.  
Milwaukee, WI, USA*

## **Plains Cree Verbal Derivational Morphology: A Corpus Investigation.**

48TH ALGONQUIAN CONFERENCE  
October 2016

*Schmirler, K., Harrigan, A. G.,  
Arppe, A., Wolvengrey, A.  
Milwaukee, WI, USA*

## **So similar in principle, but so different in practice – mixing texts, elicitation and experimentation in the study of the Plains Cree independent and conjunct verb constructions.**

NEW WAYS OF ANALYZING SYNTACTIC VARIATION 2  
May 2016

*Arppe A., Harrigan A., Schmirler,  
K.*

*Gent, Belgium*

## **Word Class Frequencies According to Corpora**

3RD PRAIRIE WORKSHOP ON LANGUAGE AND LINGUISTICS  
March 2016

*Schmirler, K. and Harrigan, A. G.  
Regina, SK, Canada*

## **Learning from the Computational Modelling of Plains Cree Verbs**

COMPUTATIONAL METHODS FOR DESCRIPTIVE AND THEORETICAL MORPHOLOGY AT THE  
17TH INTERNATIONAL MORPHOLOGY MEETING  
February 2016

*Harrigan, A., Antonsen, L., Arppe,  
A., Bowers, D., Trosterud, T. and  
Wolvengrey, A.*

*Vienna, Austria*

## **Modelling the Plains Cree Verbs**

47TH ALGONQUIAN CONFERENCE  
October 2015

*Antonsen, L., Arppe, A., Harrigan  
A. G., Trosterud, T., Wolvengrey, A.  
Winnipeg, MB, Canada*

## **oswêw êkwa ê-tipiskâk, mâka mâciw âhpô ê-mâcît?**

47TH ALGONQUIAN CONFERENCE  
October 2015

*Harrigan, A. G. and Arppe, A.  
Winnipeg, MB, Canada*

## **Vowel Spaces and Reduction in Plains Cree**

ACOUSTICS WEEK IN CANADA 2015  
October 2015

*Harrigan, A., Tucker B.  
Halifax, NS, Canada*

## Variations in Goals and Methods of Linguistic Education: A Comparison of Academic And Community-Based Approaches to Linguistics

4TH INTERNATIONAL CONFERENCE ON LANGUAGE DOCUMENTATION AND  
REVITALIZATION  
February 2015

*Jerry, M., Harrigan, A., Bontogon  
M., and Casavant, T.*

*Honolulu, HI, USA*

## Analysis of a Death

KIAS TODAY'S IDEAS, NOW  
August 2013

*Harrigan, G.  
Edmonton, AB, Canada*

## Campus Talks

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### Well, That Didn't Work: Building a Plains Cree speech synthesizer with forced alignment through Simple4All

DEPARTMENT COLLOQUIUM  
September 2018

*Harrigan, A. G., Mills, T., Stan A.*

*University of Alberta*

### Conjunct(ion) Junct(ion): what's your funct(ion)

DEPARTMENT COLLOQUIUM  
September 2017

*Harrigan, A. G.  
University of Alberta*

## Professional Service

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### 4th Workshop on Computational Methods for Endangered Languages

COMMUNITY TRACK CHAIR

*2020 - 2021*

I worked with the computational track chair to create a review committee, to organize submissions for review, and provide reviews where needed.

### 28th International Conference on Computational Linguistics

SUB-REVIEWER

*2020*

I sub-reviewed two papers.

### 12th Language Resources and Evaluation Conference

SUB-REVIEWER

*2020*

I reviewed three papers.

### 1st Joint Workshop on Spoken Language Technologies for Under-resourced languages (SLTU) and Collaboration and Computing for Under-Resourced Languages (CCURL)

SUB-REVIEWER

*2020*

I sub-reviewed two papers.

## University Service

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### Student Library Advisory Committee

*University of Alberta*

BOARD MEMBER

*2017 - 2020*

I provided feedback to the University of Alberta Libraries regarding library services and programs for graduate students.



## **Linguistics Graduate Student Association**

### **PHD REPRESENTATIVE**

*University of Alberta*

*2019 - 2020*

I acted as the representative for PhD students to the Department of Linguistics.

## **Linguistics Graduate Student Association**

### **PRESIDENT**

*University of Alberta*

*2017 - 2018*

I lead the association and helped steer its activities, acted as the primary point of conduct, and filled in where needed to help serve Linguistics graduate students in a social and professional capacity.

## **Appeals and Complaints Board for the Graduate Students' Association**

### **BOARD MEMBER**

*University of Alberta*

*2017 - 2018*

I sat on the board that hears official appeals and complaints directed toward the Graduate Students' Association.

## **Linguistics Graduate Student Association/Department of Linguistics**

### **GRADUATE STUDENTS' ASSOCIATION REPRESENTATIVE**

*University of Alberta*

*2017 - 2018*

I acted a department representative on the general council of the Graduate Students' Association.

## **Linguistics Graduate Student Association**

### **TREASURER**

*University of Alberta*

*2016 - 2017*

I administered and kept track of the association's funds in addition to applying for funding from various sources.

## **Linguistics Graduate Student Association**

### **EVENT COORDINATOR**

*University of Alberta*

*2015 - 2016*

I planned and executed events through the University of Alberta's Student Group Services for the Linguistics Graduate Student's Association.

## **University of Alberta Undergraduate Linguistics Club**

### **VICE-PRESIDENT**

*University of Alberta*

*2014 - 2015*

I operated the undergraduate linguistics helpdesk, executed social events through the University of Alberta's Student Group Services, redrafted the constitution, managed, scheduled, and led meetings, and created training materials for future executive members.

## **Further Training**

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### **Graduate Teaching and Learning Program**

*Level 1*

*University of Alberta*

I completed coursework in essential competencies for pedagogues, including classroom management, assessment, and communication in the classroom.