

ROLANDO ALBERTO COTO SOLANO

PERSONAL INFORMATION

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RESEARCH INTERESTS

Language revitalization and technology, natural language processing for low-resource languages. Indigenous literacy and material creation. Tone, phonetics, language contact. Chibchan, Otomanguean and Polynesian languages.

EDUCATION

- 2016 Ph.D. Linguistics · University of Arizona
Dissertation: *Tonal Phonetics, Phonology and Literacy in the Me'phaa Vathaa Community in Guerrero, Mexico*
Committee: Ofelia Zepeda and Andrew Wedel (chairs), Leisy Wyman, Natasha Warner, Christian DiCanio
- 2012 M.A. Linguistics · University of Arizona
- 2006 B.A. Computer Science · University of Costa Rica

POSITIONS HELD

- 2020- Assistant Professor · Dartmouth College
Assistant Professor, Department of Linguistics. Adjunct Assistant Professor, Department of Computer Science. Affiliate Professor, Quantitative Social Science Program (QSS). Focus on NLP for low-resource languages.
- 2017-2019 Lecturer in Sociophonetics · Victoria University of Wellington
School of Linguistics and Applied Language Studies and School of Mathematics and Statistics.
- 2010-2016 Graduate Research Associate · University of Arizona
Department of Linguistics, American Indian Language Development Institute and Arizona Phonological Imaging Lab.
- 2005-2010 Joint Coordinator · Latindex Program, University of Costa Rica
Evaluation of scientific journals, repository manager and Creative Commons Public Representative.
- 2004-2010 Freelance Programmer
Web and database programmer for University of Costa Rica, Interamerican System of Agricultural Cooperation (IICA) and *One UN* Project at the United Nations in Cape Verde.
- 2003-2008 Instructor · University of Costa Rica
School of Philology, Linguistics and Literature and School of Modern Languages.

PEER-REVIEWED PUBLICATIONS

- 2022 **Coto-Solano, R.** *Evaluating Word Embeddings in Extremely Under-Resourced Languages: A Case Study in Bribri*. Proceedings of the 29th International Conference on Computational Linguistics. Pgs 4455-4467.
- Coto-Solano, R.**, Nicholas, S.A., Datta, S., Quint, V., Wills, P., Powell, E.N., Kokaua, L., Tanveer, S, Feldman, I. *Development of automatic speech recognition for the documentation of Cook Islands Māori*. Proceedings of the 13th Conference on Language Resources and Evaluation LREC 2022. Pgs. 3872-3882.
- Abteen, E., Mager, M., Oncevay, A., Chaudhary, V., Chiruzzo, L., Fan, A., Ortega, J., Ramos, R., Rios, A., Meza Ruiz, I.V., Giménez-Lugo, G., Mager, E., Neubig, G., Palmer, A., **Coto-Solano, R.**, Vu, T. & Kann, K. *AmericasNLI: Evaluating Zero-shot Natural Language Understanding of Pretrained Multilingual Models in Truly Low-Resource Languages*. Proceedings of the 60th Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers). Pgs. 6279-6299. DOI: 10.18653/v1/2022.acl-long.435
- Coto-Solano, R.** *Computational Sociophonetics Using Automatic Speech Recognition*. Language and Linguistics Compass, September 2022, e12474, Pgs. 1-17. DOI: 10.1111/lnc3.12474
- Coto-Solano, R.** & Tràn, D. *Priming Effects of Tones in Visual Processing of Vietnamese*. Proceedings of the 1st Intl. Conference on Tone and Intonation (TAI). Pgs. 81-87. DOI: 10.21437/TAI.2021-17
- 2021 **Coto-Solano, R.**, Stanford, J. & Reddy, S. *Advances in completely automated vowel analysis for sociophonetics: Using end-to-end speech recognition systems with DARLA*. Frontiers in Artificial Intelligence, 24 Sept 2021. DOI: 10.3389/frai.2021.662097
- Birchfield, A. & **Coto-Solano, R.** "I am not that I play" *The Use of Hypercorrection in the Performance of Gender by Shakespeare's 'Breeches' Parts*. Journal of Historical Sociolinguistics, vol. 7, no. 1, 2021, pp. 27-59. DOI: 10.1515/jhsl-2018-0022
- Coto-Solano, R.**; Flores-Solórzano, S. & Loáiciga, S. *Towards Universal Dependencies for Bribri*. Proceedings of the Fifth Workshop on Universal Dependencies, SyntaxFest 2021. Pgs 16-29.
- Coto-Solano, R.** *Explicit Tone Transcription Improves ASR Performance in Extremely Low-Resource Languages: A Case Study in Bribri*. Proceedings of the First Workshop on Natural Language Processing for Indigenous Languages of the Americas, NAACL. DOI: 10.18653/v1/2021.americasnlp-1.20.
- Mager, M., Oncevay, A., Ebrahimi, A., Ortega, J., Rios, A., Fan, A., Gutierrez-Vasques, X., Chiruzzo, L., Giménez-Lugo, G., Ramos, R., Meza Ruiz, I.V., **Coto-Solano, R.**, Palmer, A., Mager-Hois, E., Chaudhary, V., Neubig, G., Vu, N.T., & Kann, K. *Findings of the AmericasNLP 2021 Shared Task on Open Machine Translation for Indigenous Languages of the Americas*. Proceedings of the First Workshop on Natural Language Processing for Indigenous Languages of the Americas, NAACL. DOI: 10.18653/v1/2021.americasnlp-1.23.
- 2020 Feldman, I. & **Coto-Solano, R.** *Neural Machine Translation Models with Back-Translation for the Extremely Low-Resource Indigenous Language Bribri*. Proceedings of the 28th International Conference on Computational Linguistics (COLING) 2020. Pgs. 3965-3976. DOI: 10.18653/v1/2020.coling-main.351.
- 2019 Nicholas, S.A. & **Coto-Solano, R.** *Glottal variation, teacher training and language revitalisation in the Cook Islands*. Proceedings of the 2019 International Congress of Phonetic Sciences (ICPhS) 2019. Pgs. 3602-3606.
- 2018 **Coto-Solano, R.**; Nicholas, S.A. & Wray, S. *Development of Natural Language Processing Tools for Cook Islands Māori*. Proceedings of the 16th Annual Workshop of The Australasian Language Technology Association. Pgs. 26-33.

- 2018 Foley, B., Arnold, J., **Coto-Solano, R.**, Durantin, G., Ellison, T.M., van Esch, D., Heath, S., Kratochvíl, F., Maxwell-Smith, Z., Nash, D., Olsson, O., Richards, M., San, N., Stoakes, H., Thieberger, N. & Wiles, J. *Building Speech Recognition Systems for Language Documentation: The CoEDL Endangered Language Pipeline and Inference System (ELPIS)*. Proceedings of the 6th Workshop on Spoken Language Technologies for Under-resourced Languages. Pgs. 200-204. DOI: 10.21437/SLTU.2018-42
- 2017 **Coto-Solano, R.** & Flores Solórzano, S. *Comparison of Two Forced Alignment Algorithms in Aligning Bribri Speech*. CLEIej Latin American Center for Computer Studies Electronic Journal, Vol. 20(1), DOI: 10.19153/cleiej.20.1.2.
- 2016 **Coto-Solano, R.** & Flores Solórzano, S. *Untrained Forced Alignment for Automatic Annotation of Speech Corpora in Costa Rican Indigenous Languages*. Revista Káñina 2016:XL(175-199). DOI: 10.15517/rk.v40i4.30234
- 2015 **Coto-Solano, R.**, Molina, A. & García, A. *Correlative Structures in Bribri*. University of British Columbia Working Papers in Linguistics, 2015. Pgs. 27-41.
- 2009 **Coto-Solano, R.** *Reanálisis de las Cláusulas Relativas en la Lengua Bribri como un Caso de Linearización en la Teoría Minimalista "Reanalysis of Bribri Relative Clauses as a Case of Linearization in Minimalist Theory"*. Proceedings of the 2nd International Applied Linguistics Conference (CILAP). Pgs. 468-478.
- Coto-Solano, R.**, Córdoba, S. & Francke, H. *Metadata Usage Tendencies in Latin American Electronic Journals*. Proceedings of the 13th International Conference on Electronic Publishing. Pgs. 311-344.
- 2008 Córdoba, S. & **Coto-Solano, R.** *Characteristics shared by the scientific electronic journals of Latin America and the Caribbean*. Proceedings of the 12th International Conference on Electronic Publishing. Pgs. 187-202.

BOOK CHAPTERS

- 2021 **Coto-Solano, R.**, Nicholas, S.A.; Hoback, B.; & Tiburcio Cano, G. *Managing data for Untrained Forced Alignment of Indigenous Languages*. In: Berez-Kroeker, A. et al. (eds). *The Open Handbook of Linguistic Data Management*. Cambridge, MA: MIT Press. Pgs. 423-436. DOI: 10.7551/mitpress/12200.003.0040
- 2011 **Coto-Solano, R.** & Córdoba, S. *Buenas Prácticas en las Revistas Electrónicas Latinoamericanas "Good Practices in Latin American Electronic Journals"*. In: Cetto, A.M. & Alonso, O. (eds). *Calidad e Impacto de la Revista Iberoamericana "Quality and Impact of Iberoamerican Journals"*. Mexico City: UNAM. Pgs. 207-228.
- 2010 Campos, D. & **Coto-Solano, R.** *El Proyecto Creative Commons en Costa Rica y la conformación del movimiento de cultura libre "The Creative Commons Project in Costa Rica and the Birth of the Free Culture Movement"*. In: Vercelli, A. (ed). *Tercera Conferencia de Creative Commons en América Latina "Third Creative Commons Conference in Latin America"*. Buenos Aires: Bienes Comunes AC. Pgs. 65-75.

LANGUAGE REVITALIZATION MATERIALS

- 2019 **Coto-Solano, R.** *Tools for the forced alignment of Indigenous languages*. URL: <http://icldc-align.appspot.com/>
<http://github.com/rolandocoto/forced-alignment/>
- 2015 **Coto-Solano, R.** & Cano, G.T. *Conceptos gramaticales en lengua me'phaa: Cuaderno de ejercicios. "Concepts of Grammar in the Me'phaa Language: Exercise Book" (Me'phaa morphology tutorial)*. URL: <http://bit.ly/gramatica-mephaa-2015>.
- 2011 Degai, T. & **Coto, R.** *Камчатка Мэзвин Сэмт "Kamchatka Our Land" (Itelmen Language Children's Book)*. Petropavlovsk-Kamchatskiy: Kamchatpress. ISBN 978-5-96100049-4.

CONFERENCE PRESENTATIONS

- 2022 **Coto-Solano, R.**, Stanford, J. & Nesbitt, M. *A Nationwide Study of the Low-Back-Merger Shift*. 2021 Meeting of the American Dialectal Society (ADS). Washington DC: LSA.
- Coto-Solano, R.** *First Approach to Tonal Reduction in Bribri: Tones are Levelled but Range Remains the Same*. 2022 Meeting of the Society for the Study of the Indigenous Languages of the Americas (SSILA). Washington DC: LSA.
- 2021 **Coto-Solano, R.** *Desarrollo de Representaciones Vectoriales (Word Embeddings) en Bribri* "Development of Word Embeddings in Bribri". 2nd International Conference in Natural Language Processing in Indigenous Languages. Universidad Michoacana de San Nicolás de Hidalgo. Michoacán, México.
- Coto-Solano, R.** *Untrained Forced Alignment as a Tool to Document Sociolinguistic Variation: Vowels in Cook Islands Māori*. 2021 Meeting of the Symposium on American Indian Languages. University of Arizona.
- 2020 **Coto-Solano, R.**, Flores Solórzano, S., González Campos, G., Feldman, I. & Quint, V. *Principales Desarrollos y Retos de la Lingüística Computacional en Lenguas Indígenas Costarricenses* "Main Developments and Challenges in Computational Linguistics in Indigenous Costa Rican Languages". 1st International Conference in Natural Language Processing in Indigenous Languages. Universidad Michoacana de San Nicolás de Hidalgo. Michoacán, México.
- 2019 Nicholas, S.A. & **Coto-Solano, R.** *Bringing the language to the learners: Engaging young people in language revitalisation using technology, popular culture, digital story telling and their myriad of extant competencies*. 6th Intl. Conference on Language Documentation and Conservation (ICLDC). University of Hawai'i at Mānoa.
- 2018 **Coto-Solano, R.** & Nicholas, S.A. *Using Untrained Forced Alignment to Study Dialectal Variation of Glottalization in Cook Islands Māori*. New Ways of Analyzing Variation Asia Pacific NWAV-AP5. University of Queensland, Brisbane.
- 2017 **Coto-Solano, R.** *Romance and Germanic Language Contact and its Consequences for Japanese Loanword Accentuation*. Linguistics Society of New Zealand 2017. University of Auckland.
- Coto-Solano, R.** & Cano, G.T. *"Fake" Writing: Phonetics, Tonal Spelling Ideologies and their Consequences for Language Revitalization*. 5th International Conference on Language Documentation and Conservation (ICLDC). University of Hawai'i at Mānoa.
- 2016 **Coto-Solano, R.** & Cano, G.T. *Tonal Reduction and Orthography in Me'phaa Vátháá*. 5th International Symposium on Tonal Aspects of Language (TAL). University of Buffalo SUNY.
- Coto-Solano, R.**, Cano, G.T. *Patrones de dificultad ortográfica en la lengua Me'phaa Vátháá: Un estudio psicolingüístico* "Patterns of Orthographic Difficulties in Me'phaa Vátháá: A Psycholinguistic Study". Colloquium of Otomanguan and Neighboring Languages (COLOV). Oaxaca, Mexico: Biblioteca de Investigación Juan de Córdova.
- Coto-Solano, R.** *Alineación forzada sin entrenamiento para la anotación automática del Me'phaa Vátháá* "Untrained Forced Alignment for Automatic Annotation of Me'phaa Vátháá". Colloquium of Otomanguan and Neighboring Languages (COLOV). Oaxaca, Mexico: Biblioteca de Investigación Juan de Córdova.
- Coto-Solano, R.** & Flores Solórzano, S. *Alineación forzada sin entrenamiento para la anotación automática de corpus orales de las lenguas indígenas de Costa Rica*. "Untrained Forced Alignment for Automatic Annotation of Speech Corpora in Costa Rican Indigenous Languages". 1st Costa Rican Colloquium of Natural Language Processing. University of Costa Rica.

- 2016 Molina, A. & **Coto-Solano, R.** *Ergative and Relativization in Bribri*. 2016 Meeting of the Society for the Study of the Indigenous Languages of the Americas (SSILA). Washington DC: LSA.
- 2015 **Coto-Solano, R.** & Cano, G.T. *Tonal Differences between the Vátháá and Malinaltepec varieties of Me'phaa*. 7th Conference on the Indigenous Languages of the Americas (CILLA). University of Texas at Austin.
- Hoffmann, M. & **Coto-Solano, R.** *Training Indigenous Scholars for Language Revitalization: Collaboration between Academia and Communities*. 4th Sociolinguistics of Language Endangerment Workshop (SoLE-4) and 25th Meeting of the Southeast Asian Linguistics Society. Chiang Mai, Thailand: Payap University.
- Coto-Solano, R.** *The Phonetics, Phonology and Phonotactics of Bribri Tone*. 2nd Intl. Conf. on Mesoamerican Linguistics. California State University.
- Coto-Solano, R.** & Wray, S. *Distribution of Consonantal Features in Middle Egyptian Verb Roots*. 46th Annual Conf. on African Ling., University of Oregon.
- Coto-Solano, R.** *Quantifying change in morphological complexity as a tool for language revitalization*. 4th International Conference on Language Documentation and Conservation (ICLDC). University of Hawai'i at Mānoa.
- Coto-Solano, R.** *Cultural Representation in Costa Rican Indigenous Textbooks*. Sandrizona Interdisciplinary Language Conference. University of Arizona.
- Coto-Solano, R.** *The Status of the External Coreferent in Bribri Head-Internal Relative Clauses*. 20th Workshop on Structure and Constituency in Languages of the Americas. University of Arizona.
- Coto-Solano, R.** *Symmetrical Contact and its Correlation with Morphological Complexity in Endangered Languages*. 89th Meeting of the Linguistic Society of America. Portland.
- 2014 **Coto-Solano, R.** *Lullabies in Costa Rican Indigenous Languages: Axiology, Conceptual Metaphors and Linguistic Features Supporting Storytelling*. In: Nicholas, S.; Chew, K; **Coto-Solano, R.**; Fierro, A.; Begay, W.; Buckner, M.; Paterson, M.E. & Gaxiola, E. *Reclaiming Indigenous Scholarship in Academic: Academic Courses as Sites of Indigenous Activism*. Panel at the 15th Annual Conference of the Association of Native American Studies. Arizona State University.
- 2013 Archangeli, D., Mahdavi, M., Ellison, D., Hahn-Powell, G., **Coto-Solano, R.**, Berry, J. & Boersma, P. *UltraPraat: Software and Database for Simultaneous Acoustic and Articulatory Analysis*. Ultrafest VI. Edinburgh: Queen Margaret University.
- 2012 **Coto-Solano, R.** & Hinton, L. *How to make your own Native Language mobile App? A Self-Training Experience*. 10th Hawaii International Conference on Arts and Humanities (HICAH). Honolulu.
- 2011 **Coto-Solano, R.** & Hinton, L. *Multimedia Language Lessons? Yes, they're not that hard to make!*. Stabilizing Indigenous Languages Symposium (SILS). University of New Mexico.
- 2010 **Coto, R.** *Creative Commons y Science Commons en Costa Rica "Creative Commons and Science Commons in Costa Rica"*. 1st Costa Rican E-Science Symposium. University of Costa Rica.
- 2009 **Coto, R.** *El estado de las licencias Creative Commons en Costa Rica "State of the Creative Commons Licenses in Costa Rica"*. aCCeso Creativity, Community and Science Seminar. University of Costa Rica.

- 2009 **Coto, R.** *Creative Commons y el acceso abierto a materiales educativos. "Creative Commons and Open Access to Educational Materials"*. 11th National Conference on Sciences and Social Studies. Heredia, Costa Rica: National University.
- 2008 **Coto, R.** *Estado actual del uso de tecnologías de la información en las revistas culturales en América Latina: Una mirada desde los ideales del "Repertorio Americano"*. "Electronic Resources in Cultural Journals in Latin America: A view from the ideals of the journal Repertorio Americano". International Conference "Universe of Scientific Journals in Latin America". Heredia, Costa Rica: National University.

POSTERS

- 2022 **Coto-Solano, R.**, Nicholas, S.A.; Hoback, B.; & Tiburcio Cano, G. *Data Management in Untrained Forced Alignment for Phonetic Research: Examples from Costa Rica, Mexico, the Cook Islands and Vanuatu*. 96th Meeting of the Linguistic Society of America. Washington DC.
- 2015 Johnston, S.; Archangeli, D. & **Coto, R.** *A Kinect 2.0 system to track and correct head-to-probe misalignment*. Ultrafest VII. University of Hong Kong.
- 2014 **Coto, R.**; Harley, H.; Gordon, B.J. & Zimmer, E.J. *A Grammatical Sketch of Maay Maay*. 45th Annual Conference on African Linguistics. University of Kansas.
- 2013 Johnston, S.; Brenner, D.; **Coto, R.** & Archangeli, D. *Probe Skewing Effects and Kinect Head-Tracking in Tongue Contour Imaging*. Ultrafest VI. Edinburgh: Queen Margaret University.
- Coto, R.** *Aymara and the Linguistic Landscape of Bolivia*. Symposium on Social Science Research in Indigenous Languages. University of Arizona
- 2011 **Coto, R.**; Gordon, B.J. & Harley, H. *Maay Maay: An Undocumented Somali Language In the Heart of Tucson*. Linguistics Datablitz. University of Arizona.

INVITED TALKS

- 2022, September *Procesamiento del lenguaje natural para lenguas indígenas: Reconocimiento de voz, traducción automática y parsing en bribri y maorí de las Islas Cook. "NLP for Indigenous Languages: ASR, machine translation and parsing in Bribri and Māori of the Cook Islands"*. Institute of Linguistic Research and School of Computer Science, University of Costa Rica.
- 2021, June *Linguistically Informed Representations Improve Deep Learning for Extremely Low-Resource Languages: A Case Study for Chibchan Languages*. CARDAMOM Seminar Series. NUI Galway, Ireland.
- 2021, June *NLP Projects and Prospects for Cook Island Māori*. Māori Speech Technology Networking Hui. University of Auckland.
- 2021, February *Phonetic Research in Cook Islands Māori using NLP*. UCLA, LING 102 "Introduction to Applied Phonetics".
- 2019, Aug-Sept *Procesamiento del lenguaje natural y documentación de lenguas indígenas: Un caso de estudio en maorí de las Islas Cook "Natural Language Processing and Indigenous Language Documentation: Case Study from Cook Islands Maori"*. School of Linguistics and School of Computer Science, University of Costa Rica (August 21st) and Accenture Costa Rica (September 25th).
- 2019, August *¿Y pa'qué quiere investigar eso? Un estudio de caso en maorí de las Islas Cook. "Why would you want to study that? A Case Study with Cook Islands Māori"*. Two lectures for the classes "FL-1030 Perspectives and Strategies in Research" and "FL-5025 Pragmatics". University of Costa Rica.

- 2019, June *Tonal Awareness in Vietnamese University Students*. Victoria University of Wellington.
- 2019, January *NLP for Under-Resourced Languages and its Application to Linguistic Research and Language Revitalization: A Case Study in Cook Islands Māori*. Dartmouth College.
- 2018, September *Progress in NLP for Cook Islands Māori*. Māori Speech Technology Networking Hui. University of Auckland.
- 2018, September *Revitalizing Indigenous Languages through Technology*. Technological Solutions to the Revitalisation and Normalisation of Indigenous Languages Panel, Te Wiki o te Reo Māori 2018. Wellington: National Library of New Zealand.
- 2017, December *Cook Islands Māori: Using New Technologies to Revitalize Our Language*. Rarotonga: University of the South Pacific.
- 2017, August *Tonal Reduction and Literacy in the Me'phaa Vátáá Community*. Linguistics Colloquium, Victoria University of Wellington.
- 2017, June *Computer-mediated activism, popular culture and language revitalization in the Americas*. Auckland University of Technology.
- 2017, June *Tonal Reduction, Awareness and Literacy in Me'phaa Vátáá*. Linguistics Seminar. Christchurch: University of Canterbury.
- 2017, May *Mapping Indigenous Languages*. Hamilton: Indigenous Mapping Wananga '17.
- 2016, November *Phonology at its interfaces: How phonology is shaped by external pressures*. Istanbul: Boğaziçi University.
- 2016, August *Revitalization of Indigenous/Original Languages and Technology*. Universidad Pedagógica de Bolivia. Cochabamba, El Alto (La Paz), Beni (Trinidad), Santa Cruz.
- 2016, April *Language Revitalization and Technology: Balancing Traditional and Popular Cultures*. Mexico City: Colegio de México.
- 2015, August *Reduced Tone and Literacy in the Me'phaa Language of Guerrero*. Mexico City: Institute of Philological Research, UNAM.
- 2014, October *Language Diversity and Revitalization: A Global Struggle*. Tucson: Osher Lifelong Learning Institute.
- 2013, January *Accent Patterns of Non-English Loanwords in Japanese*. Linguistics Colloquium. University of Arizona.
- 2012, July *Revitalización de las lenguas originarias y los ecosistemas lingüísticos como una lucha global "Revitalization of Indigenous Languages and Linguistic Ecosystems: A Global Struggle"*. La Paz, Bolivia: Machaqa Amawt'a Foundation.

ESSAYS

- 2006 *Experiencia como estudiante de intercambio en el Japón "Experience as an Exchange Student in Japan"*. In: Nassar, A.L. (ed). *Costa Rica and Japan: 70 years of relations*. Pgs. 94-97.

TEACHING EXPERIENCE

Instructor

- 2022, Spring LING48/CS72 Accelerated Computational Linguistics. Dartmouth College. Approximately 90 students.
- 2022, Winter LING28 Computational Linguistics. Dartmouth College. 14 students.

2022, Winter	LING10 Statistics for Linguistics. Dartmouth College. 8 students.
2021, Spring	LING48/COSC72 Accelerated Computational Linguistics. Dartmouth College. 78 students.
2020, Fall	LING1 Introduction to Linguistics. Dartmouth College. 68 students.
2020, Spring	LING48/COSC72 Accelerated Computational Linguistics. Dartmouth College. 35 students.
2020, Winter	LING 28 Computational Linguistics. Dartmouth College. 19 students.
2020, Winter	LING 10 Statistics for Linguistics. Dartmouth College. 6 students.
2019, Mar-May	LING 221 Sociolinguistics. Victoria University of Wellington. 18/36 contact hours; co-taught with Dr. Miriam Meyerhoff. Approximately 35 students.
2018, Mar-May	LING 411 Research preparation (Linguistics). Victoria University of Wellington. 6/36 contact hours; co-taught with Dr. Sasha Calhoun, Dr. Paul Warren and Dr. Meredith Marra. 6 students.
2018, Jul-Nov	STAT 293 Applied Statistics 2B. Victoria University of Wellington. 18/36 contact hours; co-taught with Dr. Nokuthaba Sibanda. 72 students.
2018, Jul-Nov	STAT 193 Statistics in Practice. Victoria University of Wellington. 9/36 contact hours; co-taught with Dr. David Cox, Dr. Nokuthaba Sibanda and Dr. Monique Ladds. 628 students.
2018, Jul-Nov	LING 111 Introduction to Linguistics. Victoria University of Wellington. 7/36 contact hours, Co-taught with Dr. Sasha Calhoun, Dr. Miriam Meyerhoff and Dr. Victoria Chen. 107 students.
2018, Jul-Nov	LALS 541 Applied Linguistics Research Process. Victoria University of Wellington. 2/24 contact hours, Co-taught with Dr. Jean Parkinson. 14 students.
2018, Jul-Nov	LING 228 Sounds of Speech. Victoria University of Wellington. 4/36 contact hours, Co-taught with Dr. Sasha Calhoun. 10 students.
2018, Jul-Nov	LING 330 Advanced Sociolinguistics. Victoria University of Wellington. 4/24 contact hours, Co-taught with Dr. Miriam Meyerhoff. 10 students.
2018, Mar-May	STAT 193 Statistics in Practice. Victoria University of Wellington. 9/36 contact hours; co-taught with Dr. David Cox, Dr. Yuichi Hirose and Dr. Yuan Yao. Approximately 650 students.
2018, Mar-May	LALS 513 Pronunciation of English. Victoria University of Wellington. Coordinator; 20 contact hours. Approximately 10 in-class and 10 online students.
2018, Mar-May	LING 411 Research preparation (Linguistics). Victoria University of Wellington. 6/36 contact hours; co-taught with Dr. Sasha Calhoun, Dr. Miriam Meyerhoff and Dr. Meredith Marra. 6 students.
2018, Mar-May	LING 221 Sociolinguistics. Victoria University of Wellington. 15/36 contact hours; co-taught with Dr. Miriam Meyerhoff. Approximately 25 students.
2017, Jul-Nov	STAT 293 Applied Statistics 2B. Victoria University of Wellington. 18/36 contact hours; co-taught with Dr. Nokuthaba Sibanda and Dr. Monique Ladds. Approximately 70 students.
2017, Jul-Nov	LING 111 Introduction to Linguistics. Victoria University of Wellington. 6/36 contact hours, Co-taught with Dr. Paul Warren and Dr. Sasha Calhoun. Approximately 90 students.

2017, Jul-Nov	LING 328 Phonetics and Phonology. Victoria University of Wellington. 12/36 contact hours; co-taught with Dr. Sasha Calhoun. Approximately 10 students.
2017, March-May	LING 221 Sociolinguistics. Victoria University of Wellington. 18/36 contact hours; co-taught with Dr. Miriam Meyerhoff. Approximately 25 students.
2017, March-May	LALS 513 Pronunciation of English. Victoria University of Wellington. Coordinator; 20 contact hours. 12 in-class and approximately 10 online students.
2016, June	LING 445A/545A Language Survey Data Management. University of Arizona. Created and co-taught with Dr. Tyler Peterson. 9 students.
2015, June	LING 545A Translation of Popular Media into Indigenous Languages. University of Arizona. Created and co-taught with Dr. Tyler Peterson. 5 students.
2014, June	LING 445A/545A Programming of Mobile Apps for Indigenous Languages. Created for the AILDI program. University of Arizona. 5 students.
2013, June	LING/AIS 210 American Indian Languages. Online class, University of Arizona. Approximately 20 students.
2013, Spring	LING 597A Descriptive Linguistics for Indigenous Languages. University of Arizona. Co-taught with Dr. Jane Hill. 3 students.
2011-2014	Six classes of Language Revitalization and New Technologies. Created for the Scholarships for Education and Economic Development (SEED) Program, University of Arizona and Georgetown University. 15-20 students per semester.
2012, June	LING 497B/597B Linguistics Seminar: Curriculum and Instruction in Bilingual and Second Language Environments Using Technology. University of Arizona. Created and co-taught with Lucille Watahomigie. 12 students.
2008, Spring	FL-2160 Contemporary Spanish Grammar. University of Costa Rica. 2 sections; approximately 35 students per section.
2007, Spring	FL-3168 Introduction to Linguistics in English. University of Costa Rica. 20 students.

Workshops

2022, June	<i>Speech Recognition</i> . Institute on Collaborative Language Research (CoLang). Linguistic Society of America and University of Montana. 2 contact hours; co-taught with Dr. Sally Akevai Nicholas. Approx. 30 participants.
2019, Feb	<i>Accelerating the analysis of your audio recordings with Untrained Forced Speech Alignment</i> . 6th International Conference on Language Documentation and Conservation (ICLDC). University of Hawai'i at Mānoa. 90 x 2 contact minutes; co-taught with Dr. Samantha Wray, Dr. Sally Akevai Nicholas and Dr. Tyler Peterson. Approx. 80 participants.
2019, Jan	<i>Natural Language Processing in Cook Islands Māori</i> . Taught as part of the class CM221 <i>Cook Islands Māori 2</i> , University of the South Pacific, Rarotonga. 5 contact hours. Approx. 20 teachers.
2018, Dec	<i>Accelerating linguistic analysis with Untrained Forced Speech Alignment</i> . Centre for Linguistics, Jawaharlal Nehru University. New Delhi, India. 8 contact hours; co-taught with Dr. Samantha Wray. Approx. 15 participants.
2018, June	<i>Translating and Interpreting Popular Media into Native Languages</i> . Institute on Collaborative Language Research (CoLang), Linguistic Society of America (LSA). University of Florida at Gainesville. 5 contact hours; co-taught with Dr. Tyler Peterson. Approx. 20 students.

- 2015, July *Me'phaa Grammar Workshop*. Indigenous Education Office, Education Department of the State of Guerrero, Mexico. 16 teachers.
- 2014, July *Language Revitalization and Linguistic Analysis Workshop*. Indigenous Education Office, Education Department of the State of Guerrero, Mexico. 25 teachers.
- 2013, June Linguistic Consultant, *Breath of Life* program. Smithsonian Institution, National Museum of the American Indian and Library of Congress. Assisted 5 community members in processing materials in Cahuilla, Tataviam and Tongva languages.

Tutor/Teaching Assistant/Grader

- 2017, Jul-Nov Section Tutor, STAT 193 Statistics for Natural and Social Sciences. Victoria University of Wellington. Approximately 20 students.
- 2017, March-May Section Tutor, STAT 193 Statistics for Natural and Social Sciences. Victoria University of Wellington. Approximately 20 students.
- 2014, Spring LING 315 Introduction to Phonology. University of Arizona. Approximately 40 students.
- LING 588 Linguistic Documentation and Elicitation. Interpreter. Approximately 10 students.

Instructor - Japanese as a Second Language

- 2003-2005 Three sections of Japanese I (low beginners, 15 students per section), one section of Japanese II (mid beginners, 10 students) and one section of Japanese III (high beginners, 5 students). University of Costa Rica.

ACADEMIC SUPERVISION

Bachelor's Degree Level

- 2022- Advisor to Sarah Karnes. Honors Theses in Computational Linguistics, Dartmouth College. *Universal Dependencies for Cook Islands Māori*.
- 2022- Advisor to Veronica Quidore. Presidential Scholar, Dartmouth College. *Universal Dependencies for Bribri*.
- 2021-2022 Secondary Advisor to Yuri Oh. Senior Fellow, Dartmouth College. *Use of Psylocybin in the Context of Psychotherapy to Treat Drug-Resistant Cases of Depression and Addiction*.
- 2021 Advisor to Mark Lekina Rorat. E.E. Just Summer Research Internship, Dartmouth College. *Sentiment analysis of Mixed Swahili-English and Sheng Text*.
- Advisor to Katie Shi, QSS Senior Project. *Non-English Social Media and Predictions of the Spread of COVID-19 in Non-English Speaking Communities*.
- 2020 Secondary Advisor to Jessica Campanile. Honors Theses in Linguistics, Dartmouth College. *Putting Pain into Words: An investigation of health-related conversation using corpus linguistics methods*.
- 2017 Primary Advisor to Alexandra Birchfield. Honors Bachelors degree in Linguistics, Victoria University of Wellington. *"I am not that I play" Linguistic variation as a marker of gender in Shakespeare's cross dressing plays*. Finished on schedule, awarded A+ by external reviewer. Winner of the *Ian Gordon Prize in Linguistics* from Victoria University of Wellington in 2017. Presented at the 2017 Linguistic Society of New Zealand conference and accepted for publication in the *Journal of Historical Sociolinguistics*.

Primary Advisor to Mark Johnstone. Honors Bachelors degree in Linguistics, Victoria University of Wellington. *Politics and the Media: A corpus-based comparative study of political press releases in New Zealand*. Finished on schedule, awarded A by external reviewer.

Masters

- 2018 Primary Advisor to Lei Chen. Masters in Applied Linguistics, Victoria University of Wellington. *From Mandarin Lexical Tone to English Lexical Stress: Review of the Cross-Language Mediation Model for Mandarin Adult Learners*. Finished on schedule, awarded A+ by external reviewer. Winner of the *Ian Gordon Prize in Linguistics* from Victoria University of Wellington in 2018.
- 2017 Primary Advisor to Minh Thu Huynh. Masters in Applied Linguistics, Victoria University of Wellington. *The Application of Shadowing to English Pronunciation on Vietnamese Elementary Learners*. Finished on schedule, awarded A by external reviewer.

Ph.D.

- 2017- Secondary advisor to Brittany Hoback. Ph.D. in Linguistics, Victoria University of Wellington. *Banam Bay Language: Documentation and Language Maintenance*. 2 years completed. Awarded ELDP grant (IGSo329) scholarship for £41146.

GRANTS AND FUNDING

National and International

- 2022 Royal Society of New Zealand Te Apārangi - Marsden Fund: Fast Start grant "Development and optimisation of Te Vairanga Tuatua, a multimedia-multipurpose corpus of Cook Islands Māori". Associate Investigator; Principal Investigator Sally Akevai Nicholas. 21-MAU-018, NZ\$380,000.
- 2018 Royal Society of New Zealand Te Apārangi - Marsden Fund: Fast Start grant "Development of Tonal Metacognition in Vietnamese and Me'phaa". Principal Investigator. 18-VUW-184, NZ\$300,000.
- 2016 National Science Foundation: Assessing and Documenting the Vitality of Native American Languages Co-author; Principal Investigator Dr. Tyler Peterson. BCS-1601738. US\$50,000 for language assessment workshops.
- 2015 National Science Foundation: CAP Partnerships for Indigenous Knowledge and Digital Literacies Consultant; Principal Investigators Dr. John Reinhardt and Dr. Susan Penfield. BCS-1321663. US\$52,756 for workshops on augmented reality language teaching.
- 2009 US Department of State and Institute of International Education: Fulbright Foreign Student Program. Funding for Masters degree.
- 2005 Office of the Prime Minister of Japan and United Nations University: Ship for World Youth Program (SWY). Exchange program in Japan, Australia, New Zealand and Fiji.

Local

- 2021 Dartmouth College, Neukom Institute. NZ\$24800 for gamification of sociophonetic data collection. (Co-PI with Prof. James Stanford).
- 2017 Victoria University of Wellington. Faculty Research Grant. NZ\$3460 for research on Vietnamese tonal metacognition.
- 2016 University of Arizona. Graduate Professional Student Council Travel Grant for professional development. US\$490 for conference travel.
- 2016 University of Buffalo SUNY. Stipend for Conference Travel. US\$750.
- 2015 University of Arizona. Graduate and Professional Students Association's Research and Projects Grant. US\$1700 for dissertation data processing.

- 2015 University of Arizona Center for Latin American Studies. Tinker Research Grant. US\$400 for fieldwork in Mexico.
- 2014 University of Arizona. Graduate Professional Student Council Travel Grant for professional development. \$520 for conference travel.

SERVICE

- 2022 Competition *Second AmericasNLP Competition on Speech-to-Text Translation for Indigenous Languages of the Americas* at NeurIPS 2022. · Co-organizer of the Shared Task.
- Workshop *First workshop on NLP applications to Field Linguistics (FieldMatters)* at COLING 2022. · Program Committee Member.
- Conference *North American Association of Computational Linguistics (NAACL)*. · Senior Area Reviewer.
- Journals *Language and Linguistics Compass* and *Linguistics Vanguard*. · Peer reviewer.
- 2021 Workshop *AmericasNLP* in the conference *North American Association of Computational Linguistics (NAACL)*. · Co-organizer of Shared Task.
- 2020- Workshop *Society for the Study of the Indigenous Languages of the Americas (SSILA)* at LSA. · Peer reviewer.
- 2020 Journals *Frontiers in Artificial Intelligence* and *Asia Pacific Language Variation*. · Peer reviewer.
- 2018 *Journal of Home Language Research*, journal *Linguistics and Education* and journal *Language Documentation and Conservation*. · Peer reviewer.
- 2016 - Present Google Earth Outreach. · Member of the Outreach Trainers Network, trainer in Google mapping tools.
- 2017 National Science Foundation. · Documenting Endangered Languages (DEL) Grant Peer reviewer.
- 2016-2017 Smithsonian Institution Scholarly Press · Peer reviewer.
- 2012-2014 Arizona Linguistic Circle · Treasurer (2012), liaison with Native American Language program (2013), vice-president (2014).
- 2012-2014 Arizona Linguistic Circle Conference · Web manager (2012), coordinator of peer review (2014).
- 2012-2016 Flandrau Planetarium, University of Arizona · Telescope operator and educator.

COMPUTER SKILLS

<i>Languages</i>	Python, L ^A T _E X, R, Java, C#, C++.
<i>Machine Learning</i>	TensorFlow, Kinect API, Weka.
<i>ASR</i>	Kaldi, DeepSpeech, Wav2Vec2, Google Cloud Platform Speech API.
<i>Machine Translation</i>	OpenNMT.
<i>Internet</i>	HTML, CSS, ASP.NET, Java JSP. DSpace repositories. AWS EC2.
<i>Psycholinguistics</i>	DMDX, OpenSesame.
<i>Crowdsourcing</i>	Amazon Mechanical Turk.

LANGUAGE SKILLS

COSTA RICAN SPANISH	· Native
ENGLISH	· Superior, iBT TOEFL 117/120
PORTUGUESE	· Advanced Low
JAPANESE	· Intermediate High, JLPT-N3 Approved
FRENCH	· Intermediate Mid, DELF-B1 Approved
ITALIAN	· Intermediate Low, PLIDA-B1 Approved
BRIBRI	· Novice High
MANDARIN	· Novice Mid, HSK-1 Approved

PROFESSIONAL AFFILIATIONS

ARC CENTRE OF EXCELLENCE FOR THE DYNAMICS OF LANGUAGE (CoEDL), AUSTRALIAN NATIONAL UNIVERSITY. AFFILIATE.	· 2018-2019
LINGUISTIC SOCIETY OF AMERICA (LSA)	· 2014-present
ASSOCIATION FOR COMPUTING MACHINERY (ACM)	· 2007-present
SOCIETY FOR THE STUDY OF THE INDIGENOUS LANGUAGES OF THE AMERICAS (SSILA)	· 2015-present
COSTA RICAN PROFESSIONAL ASSOCIATION OF COMPUTER SCIENTISTS AND ENGINEERS (CPIC)	· 2008-present

November 14, 2022