

## EDUCATION

- **PhD, University of Northern British Columbia** **Prince George, Canada**  
Natural Resources & Environmental Studies *Sep.2021 – Apr.2026*  
Supervisor: Ken A. Otter  
Thesis: [From recordings to ecology: Turning bird sounds into ecological insights](#)
- **MSc, University of British Columbia** **Vancouver, Canada**  
Department of Forest Resources Management *Sep.2017 – Nov.2019*  
Supervisor: Bianca N.I. Eskelson  
Thesis: [Innovative and conventional modelling for avian acoustic and fire severity analyses](#)
- **Bachelor of Science, National Taiwan University** **Taipei, Taiwan**  
School of Forestry and Resource Conservation & Department of Physics *Sep.2012 – Jun.2017*  
Double Major Student  
Supervisor: Biing T. Guan, Tzeng-Yih Lam, and Shi-Wei Chu

## WORK EXPERIENCE

- **Independent Data Consultant** **Self-Employed**  
Partnering with National Geographic, Wildlife Acoustics, and the Cornell Lab of Ornithology *Dec.2025 – present*
- **Independent Infographic Designer** **Self-Employed**  
Designing scientific infographics, graphical abstracts, and official conference logos ([portfolio](#)) *Mar.2023 – present*
- **Co-Founder & Program Coordinator** **Applied Analysis Hub**  
Organizing technical workshops and hosting statistical consulting sessions ([website](#)) *Sep.2021 – Dec.2025*
- **Sessional Instructor** **UNBC**  
Co-instructor: Lisa Koetke. Advanced Statistical Analyses for Natural Resource Sciences *Sep.2023 – Dec.2023*
- **Data Analyst** **Endemic Species Research Institute**  
Modeling avian elevational migration patterns in Taiwan *Apr.2020 – Jul.2021*
- **Data Analyst** **Birds Canada**  
Historical survey data summarizing and cleaning *Jan.2021 – Mar.2021*

## PUBLICATIONS

### JOURNAL ARTICLE.....

- **Tseng, S.**, Hodder, D., and Otter, K. **2026** Passive acoustic monitoring reveals seasonal and habitat-related patterns in bird vocal activity. *Journal of Wildlife Management*. (Under Review)
- **Tseng, S.** and S. Kahl. **2026** birdnetTools: An R package for working with BirdNET output. *Journal of Open Source Software*. (Under Review)
- Baum, J.K., Slein, M.A., Garen, J.C., . . . , **Tseng, S.**, et al. **2026** Widespread ecological responses and cascading effects of the record-breaking 2021 North American heatwave. *Nature Ecology and Evolution*. ([link](#))

- Darras, K., Rountree, R., Van Wilgenburg, S., . . . , **Tseng, S.**, et al. **2025** Worldwide Soundscapes: a synthesis of passive acoustic monitoring across realms. *Global Ecology and Biogeography*. ([link](#))
- **Tseng, S.**, Hodder, D., and Otter, K. **2025** Setting BirdNET confidence thresholds: Species-specific vs. universal approaches. *Journal of Ornithology*. ([link](#))
- **Tseng, S.**, Hodder, D., and Otter, K. **2024** Using Autonomous Recording Units for Vocal Individuality: Insights from Barred Owl Identification. *Avian Conservation and Ecology*. ([link](#))
- Pelletier, F., Eskelson, B.N.I., Monleon, V.J., and **Tseng, Y.-C.** **2021** Using Landsat imagery to assess burn severity of National Forest Inventory plots. *Remote Sensing*. ([link](#))
- **Tseng, Y.-C.**, Eskelson, B.N.I., Martin, K., and LeMay, V. **2021**. Automatic bird sound detection: Logistic model based acoustic occupancy model. *Bioacoustics*. ([link](#))
- **Tseng, Y.-C.**, and Chu, S.-W. **2017**. High spatio-temporal-resolution detection of chlorophyll fluorescence dynamics from a single chloroplast with confocal imaging fluorometer. *Plant Methods*. ([link](#))

## OPEN-SOURCE SOFTWARE PACKAGE.....

- **birdnetTools** (2025) — R package for post-processing, visualization, and validation of BirdNET output. Developed in collaboration with the BirdNET team. Available on GitHub. ([Documentation](#))
- **bbsTaiwan** (2024) — R package for accessing and analyzing Taiwan Breeding Bird Survey (BBS) data. Developed for national biodiversity research and public engagement. Available on GitHub. ([Documentation](#))

## CONFERENCE TALK / POSTER ([check full list here](#)).....

- **The Wildlife Society Conference - Alberta Chapter** **Banff, Canada**  
*Passive acoustic monitoring in avian ecology (Poster)* **Feb.2026**
- **SCO-SOC Annual Meeting** **Saskatoon, Canada**  
*BirdNET workshop organizer, invited seminar speaker, conference organizing team* **Aug.2025**
- **Ecological Data Science Summit** **Santa Barbara, USA**  
*Invited by conference organizer for discussion of current AI use in ecology* **Feb.2025**
- **Posit::conf** **Seattle, USA**  
*Selected as one of the 40 opportunity scholars, early career software developer* **Aug.2024**
- **AFO SCO-SOC WOS Joint Meeting** **Peoria, USA**  
*Evaluation and application of BirdNET: identification of bird species by their sounds* **Aug.2024**
- **International Ecoacoustic Congress** **Madrid, Spain**  
*Setting BirdNET confidence thresholds: Species-specific vs. universal approaches.* **Jul.2024**
- **Congress of Animal Behavior and Ecology** **Taipei, Taiwan**  
*Monitoring avian biodiversity across wide spatiotemporal scale using passive acoustic monitoring* **Feb.2024**
- **AOS-SCO Joint Conference** **London, Canada**  
*Large scale biodiversity assessment with bird sound* **Aug.2023**
- **BC/Canada TWS Joint Conference** **Victoria, Canada**  
*Passive acoustic as a tool to monitor individual Barred Owls* **Mar.2023**
- **UNBC Research Week** **Prince George, Canada**  
*Passive acoustic as a tool to monitor individual Barred Owls* **Feb.2023**
- **International Ornithological Congress** **Virtual**  
*Modelling avian altitudinal migration using citizen science data* **Aug.2022**
- **AOS-SCO Joint Conference** **Virtual**  
*seewave and tuneR: sound analysis in ornithology* **Aug.2021**

## RECOGNITIONS

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### RESEARCH GRANT.....

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|--------------------------------------------------------------------------------------------------------|----------------------------|
| ○ <b>Wildlife Acoustics Grant Program</b>                                                              | <b>Wildlife Acoustics</b>  |
| ○ <i>Acoustic monitoring for migratory birds in Lithuania – Land of the storks</i>                     | <i>May.2026</i>            |
| ○ <b>Infrastructure Steering Committee Grant</b>                                                       | <b>R Consortium</b>        |
| ○ <i>birdnetTools 2.0: Linking BirdNET outputs to occupancy modeling in R</i>                          | <i>Dec.2025</i>            |
| ○ <b>Michael Smith Foreign Study Supplements</b>                                                       | <b>NSERC</b>               |
| ○ <i>Developing an R package for BirdNET, collaboration with the BirdNET team in Chemnitz, Germany</i> | <i>June.2025</i>           |
| ○ <b>Early Career Grant</b>                                                                            | <b>National Geographic</b> |
| ○ <i>Avian acoustic monitoring of migratory birds in Lithuania – Land of the storks</i>                | <i>May.2025</i>            |
| ○ <b>rOpenSci Championship Program</b>                                                                 | <b>rOpenSci</b>            |
| ○ <i>Developing an R package for Taiwan Breeding Birds Survey data management</i>                      | <i>Jan.2024</i>            |
| ○ <b>Siberian Tundra Arctic Research Grant</b>                                                         | <b>TEEDF</b>               |
| ○ <i>Field sound recording - Avian vocalization documentation in Siberia Arctic Tundra</i>             | <i>Apr.2017</i>            |

### SCHOLARSHIP and FELLOWSHIP ([check full list here](#)).....

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|--------------------------------------------------------------------------------------------------------|-------------------------|
| ○ <b>Dr. Joselito (Lito) Arocena Memorial Graduate Prize</b>                                           | <b>UNBC</b>             |
| ○ <i>Awarded to UNBC NRES graduates</i>                                                                | <i>May.2026</i>         |
| ○ <b>Bert Brink Scholarship</b>                                                                        | <b>BC Nature</b>        |
| ○ <i>Outstanding graduate student for natural resources research in BC</i>                             | <i>Aug.2025</i>         |
| ○ <b>NBCGSS Legacy Scholarship</b>                                                                     | <b>UNBC</b>             |
| ○ <i>For graduate student with contributions to the graduate student culture and graduate program.</i> | <i>Jun.2024</i>         |
| ○ <b>Hugh Hamilton Memorial Scholarship</b>                                                            | <b>Nature Vancouver</b> |
| ○ <i>For graduate student with outstanding academic &amp; involvement with Nature Science.</i>         | <i>May.2024</i>         |
| ○ <b>Canada Graduate Scholarship - Doctoral (CGS-D)</b>                                                | <b>NSERC</b>            |
| ○ <i>Rewarding and retaining high-calibre doctoral students at Canadian institutions.</i>              | <i>Apr.2023</i>         |
| ○ <b>Susan Stevenson Memorial Award</b>                                                                | <b>UNBC</b>             |
| ○ <i>Excellent academic performance</i>                                                                | <i>Nov.2022</i>         |
| ○ <b>CUPE Local 3799 Annual Bursary</b>                                                                | <b>UNBC</b>             |
| ○ <i>Excellent academic performance</i>                                                                | <i>Sep.2022</i>         |
| ○ <b>Mitacs Accelerate Fellowship</b>                                                                  | <b>MITACS</b>           |
| ○ <i>A long-term funding and internship option for PhD students in Canada</i>                          | <i>Jun.2022</i>         |
| ○ <b>Graduate Entrance Research Scholarship</b>                                                        | <b>UNBC</b>             |
| ○ <i>High academic performance for new graduate student</i>                                            | <i>Jan.2021</i>         |
| ○ <b>Mary and David Macaree Fellowship</b>                                                             | <b>UBC</b>              |
| ○ <i>Conducting research in Forestry</i>                                                               | <i>Sep.2019</i>         |
| ○ <b>VanDusen Graduate Fellowship in Forestry</b>                                                      | <b>UBC</b>              |
| ○ <i>Faculty of Forestry student in forest resource ecosystems</i>                                     | <i>Feb.2019</i>         |
| ○ <b>Werner and Hildegard HESSE Fellowship in Ornithology</b>                                          | <b>UBC</b>              |
| ○ <i>Conducting research in Ornithology</i>                                                            | <i>Oct.2018</i>         |
| ○ <b>Pei-Huang Tung and Tan-Wen Tung Graduate Fellowship</b>                                           | <b>UBC</b>              |
| ○ <i>Taiwanese students pursuing higher education in Canada</i>                                        | <i>Oct.2018</i>         |

## AWARD (check full list here)

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|-------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| ○ <b>Knowledge Mobilization Award</b><br><i>Students who actively bridge the knowledge gap between academic and public audience</i> | <b>UNBC NRES</b><br>May.2026        |
| ○ <b>SCO-SOC Taverner Award</b><br><i>Awarded for outstanding ornithological research in Canada</i>                                 | <b>SCO-SOC</b><br>Apr.2025          |
| ○ <b>Student Presentation Award</b><br><i>Best oral presentation in the annual conference in Peoria, Illinois</i>                   | <b>SCO-SOC</b><br>Aug.2024          |
| ○ <b>Best Student Presentation Award</b><br><i>Best student oral presentation in The Wildlife Society conference</i>                | <b>BC &amp; CAN TWS</b><br>Mar.2023 |
| ○ <b>3 Minute Thesis Award</b><br><i>1st place &amp; people's choice of UNBC 3MT competition</i>                                    | <b>UNBC</b><br>Feb.2023             |
| ○ <b>Teaching Excellence Award</b><br><i>Outstanding teaching performance as a teaching assistant</i>                               | <b>UNBC</b><br>Sep.2022             |
| ○ <b>Outstanding Oral Presentation Award</b><br><i>Outstanding oral presentations in Congress of Animal Behavior and Ecology</i>    | <b>CABE</b><br>Feb.2021             |
| ○ <b>Master of Data Science TA Award</b><br><i>Best TAs in Master of Data Science program of the academic year</i>                  | <b>UBC</b><br>Jun.2019              |

## ADDITIONAL PROFESSIONAL EXPERIENCE

### FIELD RECORDIST

I have contributed recordings of around 300 bird species worldwide as a recordist for Xeno-Canto and have been involved in a range of nature sound-related art and science projects ([profile](#)).

### POPULAR SCIENCE WRITER

- **2024** Why do we band birds at all? *Nature Conservation Quarterly*, 124. ([link](#))
- **2023** Nest boxes for barn owl conservation. *Nature Conservation Quarterly*, 122. ([link](#))
- **2023** When beaver dam collapses. *Nature Conservation Quarterly*, 121. ([link](#))
- **2023** Listening to the whispers of the wings. *Discovery*, 50(1):85-90. ([link](#))
- **2022** Hey, there are wild black bears in my backyard. *Nature Conservation Quarterly*, 117. ([link](#))
- **2021** Avian field recordings (II). *Feathers*, 301:22-27. ([link](#))
- **2021** Avian field recordings (I). *Feathers*, 300:38-41. ([link](#))
- **2019** Apply statistics on bird "listening". *Discovery*, 47(1):21-22. ([link](#))
- **2018** Can statistics help ornithologists "hear" birds? *BranchLines*, 29(3):11. ([link](#))

### DATA ANALYST

**Script development:** Developed and maintained R scripts and analytical workflows for ecological research.

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|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| ○ <b>Birds Canada</b><br><i>Supervisor: David Bradley. Processing large-scale acoustic data.</i>                         | <b>Langley, Canada</b><br>Jan.2024 – Mar.2024; Jan.2025 – Mar.2025 |
| ○ <b>Birds Canada</b><br><i>Supervisor: David Bradley. Digitalizing and documenting historical bird survey datasets.</i> | <b>Langley, Canada</b><br>Feb.2020 – Mar.2020                      |

**Teaching:** Led courses and coding groups in R, data analysis, and statistical methods.

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| ○ <b>Data Wrangling</b><br><i>TA, with instructor Tiffany Timbers and Tomas Beuzen</i> | <b>UBC</b><br>2019 fall |
|----------------------------------------------------------------------------------------|-------------------------|

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| ○ <b>Descriptive Statistics and Probability for Data Science</b><br>TA with instructor Mike Gelbart (2018) and Vincenzo Coia (2019)                                                  | <b>UBC</b><br>2018 fall, 2019 fall                               |
| ○ <b>Regression I, Regression II</b><br>TA with instructor Gabriela Cohen Freue (I) and Vincenzo Coia (II)                                                                           | <b>UBC</b><br>2019 spring, 2019 fall                             |
| ○ <b>Feature and Model Selection</b><br>TA with instructor Mark Schmidt and Varada Kolhatkar                                                                                         | <b>UBC</b><br>2019 spring                                        |
| ○ <b>Advanced Biometrics</b><br>TA, with instructor Bianca Eskelson                                                                                                                  | <b>UBC</b><br>2018 fall                                          |
| <b>Workshops, talks, and interviews:</b> Presented topics related to data analysis and ecological research.                                                                          |                                                                  |
| ○ <b>Introduction to Git &amp; Github</b><br>Host: Library Graduate Student Workshop Development Program                                                                             | <b>UNBC</b><br>Feb.2026                                          |
| ○ <b>BirdNET Application for Ecological Research</b><br>Host: SCO-SOC conference, co-lead with Jenn Foote                                                                            | <b>USask</b><br>Aug.2025                                         |
| ○ <b>Machine Learning Advances in Ornithology Research</b><br>Host: Nature Vancouver                                                                                                 | <b>Nature Vancouver</b><br>Nov.2023                              |
| ○ <b>From Taiwan to Arctic Tundra - the bird as a bridge (<a href="#">storytelling</a>)</b><br>Host: American Ornithology Society annual meeting storytelling event                  | <b>AOS annual meeting</b><br>Aug.2023                            |
| ○ <b>Listen to the Whispers of Wings</b><br>Host: Mossom Creek BioBlitz                                                                                                              | <b>Mossom Creek</b><br>Jun.2023                                  |
| ○ <b>Introduction to Git and Github</b><br>Host: Applied Analysis Hub                                                                                                                | <b>UNBC</b><br>Nov.2022                                          |
| ○ <b>Data Wrangling with R</b><br>Host: Applied Analysis Hub                                                                                                                         | <b>UNBC</b><br>Mar.2022                                          |
| ○ <b>A Person Who Collects Sounds (<a href="#">interview</a>)</b><br>Field recordist - a beautiful way to study Nature.                                                              | <b>Fuyu Life</b><br>Jan.2022                                     |
| ○ <b>Each Sound Recording Represents a Profound Story (<a href="#">interview</a>)</b><br>Interview of a field recordist.                                                             | <b>Canopy Life</b><br>Jun.2021                                   |
| ○ <b>The Siberian Crane: From Taiwan to Tundra (<a href="#">interview</a>)</b><br>A bird gets blown off course and inspires a young researcher to spread her own wings — in Siberia. | <b>Bird Note</b><br>May.2021                                     |
| ○ <b>Data Wrangling with R (4 sessions)</b><br>Host: Jerome Ko                                                                                                                       | <b>Endemic Species Research Institute</b><br>May.2021 – Jul.2021 |
| ○ <b>Recording Techniques for Breeding Birds Survey (6 sessions)</b><br>Host: Luna Fan                                                                                               | <b>Endemic Species Research Institute</b><br>Dec.2020 – Mar.2021 |
| ○ <b>Sharing the Sounds of Nature (<a href="#">interview</a>)</b><br>Interview with a scholar in bioacoustics.                                                                       | <b>National Education Radio</b><br>Aug. 2020                     |
| ○ <b>Automatic bird sound detection: ARU data analysis</b><br>Host: Kathy Martin                                                                                                     | <b>Canadian Wildlife Service</b><br>Oct.2018                     |
| ○ <b>Statistical Analysis in Ecology (5 sessions)</b><br>Host: Trevor Gareth Jones                                                                                                   | <b>UBC</b><br>Jan.2018 – Apr.2018                                |