Lucas da Cunha Godoy

Department of Ecology and Evolutionary Biology, University of California Santa Cruz
ldcgodoy *at* ucsc.edu · lcgodoy.me · github.com/lcgodoy
Languages: Portuguese (Native), English (Fluent), Spanish (Conversational)

Research Interests

Spatial and spatiotemporal statistics · Data fusion · Bayesian inference · Computational statistics · Environmental statistics · Species distribution modeling

Appointments

Postdoctoral Researcher **Jun 2024–Present**
Department of Ecology and Evolutionary Biology, UC Santa Cruz *Santa Cruz, CA*

- Analyzing climate-driven range shifts in species distributions using process-based models.

Education

Ph.D. in Statistics **2024**
University of Connecticut *Storrs, CT*

- **Dissertation:** *Hausdorff-Gaussian Process with Spatial and Spatiotemporal Applications*
- **Advisor:** Prof. Jun Yan

M.Sc. in Statistics **2023**
University of Connecticut *Storrs, CT*

- **Advisor:** Prof. Jun Yan

Master in Statistics **2019**
Universidade Federal de Minas Gerais *Belo Horizonte, Brazil*

- **Thesis:** *Testing Spatial Association Between Two Types of Polygons*
- **Advisor:** Prof. Renato Assunção

B.S. in Statistics **2016**
Universidade Federal do Rio Grande do Sul *Porto Alegre, Brazil*

- **Thesis:** *Introduction to Geostatistical Modeling for Counting Data: Parameter Estimation with Different MCMC Algorithms*

Awards and Honors

- Honorable Mention, Student Paper Competition, ASA ENVR Section 2024
- Summer Doctoral Dissertation Fellowship, University of Connecticut 2023
- Travel Award, EnviBayes Workshop, Colorado State University 2023
- Teaching Award, Department of Statistics, University of Connecticut 2022
- Travel Award, ISBA World Meeting 2022
- Honorable Mention, 1st Shiny Contest, RStudio 2019
- Best Paper Award, 1st Conference on Statistics and Data Science (CSDS) 2018
- Winner, 1st CEPESP Data Challenge 2017

Publications

Articles under review

Fredston, A., Ovando, D., **Godoy**, **L. d. C.**, Kong, J., Muffley, B., Thorson, J. T., & Pinsky, M. (2025). Dynamic range models improve the near-term forecast for a marine species on the move. *Ecology Letters*. https://doi.org/10.32942/X24D00

Godoy, **L. d. C.**, Fredston, A., Morales, M., Bandara, R. M. W. J., & Pinsky, M. L. (2025). drmr: A Bayesian approach to Dynamic Range Models in R. *DOUBLE-BLIND REVIEW*.

Godoy, **L. d. C.**, Matthews, G. J., & Yan, J. (2025). A review of competitive structure analytics in sports. *International Statistical Review*.

Godoy, **L. d. C.**, Prates, M. O., & Yan, J. (2025). Voronoi linkage between mismatching voting stations and census tracts in analyzing the 2018 Brazilian presidential election data. *Spatial Statistics*.

Pandya, S. S., **Godoy**, **L. d. C.**, Alexander, C. S., Schneider, D., & Harknett, K. (2025). Using worker surveys to detect labor standards non-compliance. *Statistics and Public Policy*.

Godoy, **L. d. C.**, Prates, M. O., & Yan, J. (2024). Statistical inferences and predictions for areal data and spatial data fusion with Hausdorff–Gaussian processes. *Journal of Agricultural Biological and Environmental Statistics*. https://doi.org/10.48550/arXiv.2208.07900

Peer-Reviewed Articles–Methodology

Michelin, L., **Godoy**, **L. d. C.**, Ramos, H. S., & Prates, M. O. (2025). Fast mixture spatial regression: A mixture in the geographical and feature space applied to predict porosity in the Post-salt. *Spatial Statistics*, *65*, 100873. https://doi.org/10.1016/j.spasta.2024.100873

Godoy, **L. d. C.**, Assunção, R. M., & Butler, K. A. (2022). Testing the spatial association of different types of polygons. *Spatial Statistics*, *51*, 100695. https://doi.org/10.1016/j.spasta.2022.100695

Prates, M. O., Azevedo, D. R. M., **Godoy**, **L. d. C.**, & Bandyopadhyay, D. (2021). Can Gaussian Markov random fields handle spatial confounding? *Journal of the Indian Statistical Association*, *59*(2), 197–220. https://drive.google.com/file/d/1rmxyH_7IDp8KFtIGxb6Jw_auNNbMKB3A/view

Pre-Print Articles and Software

Godoy, **L. d. C.**, Prates, M., & Quintana, F. (2025). A note on defining positive definite functions. https://arxiv.org/abs/2502.15146

Hernández, G. G., Seemann, J. R., **Godoy**, **L. d. C.**, Slot, M., & García-Robledo, C. (2025). Heat tolerance of tropical herbaceous plants increases with elevation. https://doi.org/10.1101/2025.03.12.642681

Godoy, **L. d. C.** (2024a). sapo: Spatial association of different types of polygon [R package version 0.8.0]. https://CRAN.R-project.org/package=sapo

Godoy, **L. d. C.** (2024b). smile: Spatial misalignment, interpolation, linkage, and estimation [R package version 1.0.5]. https://doi.org/10.32614/CRAN.package.smile

Peer-Reviewed Articles–Applications

Frank, S., Ibrahim, B., Feng, R., Bidra, A., Lafreniere, D., Kuo, C., **Godoy**, **L. d. C.**, & Falcone, T. E. (n.d.). Tolerability of nasal and oral povidone-iodine antisepsis for in-office procedures. *Clinical Otolaryngology*, *48*(4), 696–699. https://doi.org/10.1111/coa.14045

Abu-Arqub, S., Hariharan, A., Banankhah, S., **Godoy**, **L. d. C.**, Liu, P., Kuo, C., & Uribe, F. (2025). Accuracy of full arch scans using the itero element 2® intra-oral scanner: A clinical study [PMID: 39135489]. *Journal of Orthodontics*, *52*(2), 142–149. https://doi.org/10.1177/14653125241268755

Al-Naggar, I. M., Antony, M., Baker, D., Wang, L., **Godoy**, **L. d. C.**, Kuo, C., Fraser, M. O., Smith, P. P., Xu, M., & Kuchel, G. A. (2025). Polyploid superficial uroepithelial bladder barrier cells express features of cellular senescence across the lifespan and are insensitive to senolytics [e14399 ACE-23-0923.R2]. *Aging Cell*, *24*(2), e14399. https://doi.org/10.1111/acel.14399

Moriarty, K. L., Manfredi, K., Carrel, P., Kryzanski, E., Schwartz, D. A., **Godoy**, **L. d. C.**, Kuo, C., & Shields, A. (2025). Findings of reduced head circumference with COVID-19 infection in the third trimester: A retrospective cohort study. *Biomedicines*, *13*(4). https://doi.org/10.3390/biomedicines13040832

Sieger, M. L., **Godoy**, **L. d. C.**, Moore, T. E., Nichols, C., Goldsborough, E. J., Chen, S., Terplan, M., Griffin, B. A., & Patrick, S. W. (2025). Connecticut's novel prenatal substance exposure policy is associated with declining CPS reports and foster placements [PMID: 40623260]. *Health Affairs*, *44*(7), 821–829. https://doi.org/10.1377/hlthaff.2024.01160

Abu-Arqub, S., Al-Moghrabi, D., Kuo, C., **Godoy**, **L. d. C.**, & Uribe, F. (2024). Perceptions and utilization of tele-orthodontics: A survey of the members of the American Association of Orthodontists. *Progress in Orthodontics*, *25*(1), 16. https://doi.org/10.1186/s40510-024-00516-4

Abu-Arqub, S., Greene, R., Greene, S., Laing, K., Kuo, C., **Godoy**, **L. d. C.**, & Uribe, F. (2024). Retrospective evaluation of the success rate and factors associated with the stability of alveolar ridge orthodontic miniscrews: Pilot study. *Journal of the World Federation of Orthodontists*, *13*(4), 181–188. https://doi.org/https://doi.org/10.1016/j.ejwf.2024.02.001

Andreyeva, T., Moore, T. E., **Godoy**, **L. d. C.**, & Kenney, E. L. (2024). Federal nutrition assistance for young children: Underutilized and unequally accessed. *American Journal of Preventive Medicine*, *66*(1), 18–26. https://doi.org/https://doi.org/10.1016/j.amepre.2023.09.008

Fryc, G. A., **Godoy**, **L. d. C.**, Kuo, C., & Lurie, A. G. (2024). Prevalence of likely retro-odontoid pseudotumor in patients receiving dental CBCT examinations. *Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology*, *137*(3), 301–309. https://doi.org/10.1016/j.oooo.2023.11.005

Irsheid, R., **Godoy**, **L. D. C.**, Kuo, C., Metz, J., Dolce, C., & Abu-Arqub, S. (2024). Comparative assessment of the clinical outcomes of clear aligners compared to fixed appliance in class II malocclusion. *Clinical Oral Investigations*, *28*(8), 1–10. https://doi.org/10.1186/s12903-018-0695-z

Wilson, C., Taxel, P., Shafer, D., Tadinada, A., **Godoy**, **L. d. C.**, Kuo, C., & Freilich, M. (2024). Cone beam computed tomography outcomes in patients diagnosed with compromised bone health undergoing dental implant therapy and bone augmentation. *The Journal of Prosthetic Dentistry*. https://doi.org/10.1016/j.prosdent.2024.10.030

Abu-Arqub, S., Ahmida, A., **Godoy**, **L. d. C.**, Kuo, C., Upadhyay, M., & Yadav, S. (2023). Insight into clear aligner therapy protocols and preferences among members of the American Association of Orthodontists in the United States and Canada. *The Angle Orthodontist*, *93*(4), 417–428. https://doi.org/10.2319/101022-694.1

Abu-Arqub, S., Bashir, R., Obeng, K., **Godoy**, **L. d. C.**, Kuo, C., Upadhyay, M., & Yadav, S. (2023). Survival and failure rate of lower lingual bonded retainers: A retrospective cohort evaluation. *Orthodontics & Craniofacial Research*, *26*(2), 256–264. https://doi.org/10.1111/ocr.12608

Abu-Arqub, S., Greene, R., Greene, S., Laing, K., Kuo, C., **Godoy**, **L. d. C.**, & Uribe, F. (2023). Ridge mini-implants, a versatile biomechanical anchorage device whose success is significantly enhanced by splinting: A clinical report. *Progress in Orthodontics*, *24*(1), 27. https://doi.org/10.1186/s40510-023-00480-5

de Jesus, M., Maheshwary, A., Kumar, M., **Godoy**, **L. d. C.**, Kuo, C., & Grover, P. (2023). Association of electrocardiographic and echocardiographic variables with neurological outcomes after ischemic stroke. *American Heart Journal Plus: Cardiology Research and Practice*, *34*, 100313. https://doi.org/10.1016/j.ahjo.2023.100313

Duong, C., Zhu, Q., Aseltine Jr, R. H., Kuo, C., **Godoy**, **L. d. C.**, & Kaufman, B. (2023). A survey on cone-beam computed tomography usage among endodontists in the United States. *Journal of Endodontics*, *49*(11), 1559–1564. https://doi.org/10.1016/j.joen.2023.08.020

Harandi, M. T., Abu-Arqub, S., Warren, E., Kuo, C., **Godoy**, **L. d. C.**, Mehta, S., Feldman, J., Upadhyay, M., & Yadav, S. (2023). Assessment of clear aligner accuracy of 2 clear aligners systems. *American Journal of Orthodontics and Dentofacial Orthopedics*, *164*(6), 793–804. https://doi.org/https://doi.org/10.1016/j.ajodo.2023.05.028

Kuo, C., Liu, R., **Godoy**, **L. d. C.**, Pilling, L. C., Fortinsky, R. H., & Brugge, D. (2023). Association between residential exposure to air pollution and incident coronary heart disease is not mediated by leukocyte telomere length: A UK Biobank study. *Toxics*, *11*(6). https://doi.org/10.3390/toxics11060489

Leonard, J. F., Taxel, P., Kuo, C., **Godoy**, **L. d. C.**, & Freilich, M. (2023). Dental implant and bone augmentation treatment in bone-compromised patients: Oral health-related quality of life outcomes. *The Journal of Prosthetic Dentistry*. https://doi.org/10.1016/j.prosdent.2023.01.011

Turshudzhyan, A., **Godoy**, **L. d. C.**, Kuo, C., & Wu, G. Y. (2023). Alpha Feto-protein expression trends for screening early hepatocellular carcinoma. *Gene Expression*, *22*(2), 109–114. https://doi.org/10.14218/GE.2023.00001

Abu-Arqub, S., Banankhah, S., Sharma, R., **Godoy**, **L. d. C.**, Kuo, C., Ahmed, M., Alfardan, M., & Uribe, F. (2022). Association between initial complexity, frequency of refinements, treatment duration, and outcome in Invisalign orthodontic treatment. *American Journal of Orthodontics and Dentofacial Orthopedics*. https://doi.org/10.1016/j.ajodo.2022.06.017

Hariharan, A., Abu-Arqub, S., Gandhi, V., **Godoy**, **L. d. C.**, Kuo, C., & Uribe, F. (2022). Evaluation of interproximal reduction in individual teeth, and full arch assessment in clear aligner therapy: Digital planning versus 3d model analysis after reduction. *Progress in Orthodontics*, *23*(1), 1–10. https://doi.org/10.1186/s40510-022-00403-w

Kumar, M., Patil, S., **Godoy**, **L. d. C.**, Kuo, C., Swede, H., Kuchel, G. A., & Chen, K. (2022). Demand ischemia as a predictor of mortality in older patients with delirium. *Frontiers in Cardiovascular Medicine*, *9*. https://doi.org/10.3389/fcvm.2022.917252

Arqub-Abu, S., Voldman, R., Ahmida, A., Kuo, C., **Godoy**, **L. d. C.**, Nasrawi, Y., Al-Khateeb, S. N., & Uribe, F. (2021). Patients' perceptions of orthodontic treatment experiences during COVID-19: A cross-sectional study. *Progress in Orthodontics*, *22*(1), 1–12. https://doi.org/10.1186/s40510-021-00363-7

Huynh, C., **Godoy**, **L. d. C.**, Kuo, C., Smeds, M., & Amankwah, K. S. (2021). Examining the development of operative autonomy in vascular surgery training and when trainees and program directors agree and disagree. *Annals of Vascular Surgery*, *74*, 1–10. https://doi.org/10.1016/j.avsg.2021.01.121

Lin, G., Murase, J. E., Murrell, D. F., **Godoy**, **L. d. C.**, & Grant-Kels, J. M. (2021). The impact of gender in mentor-mentee success: Results from the women's dermatologic society mentorship survey. *International Journal of Women's Dermatology*, *7*(4), 398–402. https://doi.org/10.1016/j.ijwd.2021.04.010

Presentations

Invited Talks

Aug 2025 "On spatial statistics and sets", PUC, Santiago, Chile

Mar 2025 "Statistical Inferences and Predictions for Areal Data and Spatial Data Fusion with Hausdorff-Gaussian Processes", UCSF, San Francisco-CA, USA

Nov 2024 "Statistical Inferences and Predictions for Areal Data and Spatial Data Fusion with Hausdorff-Gaussian Processes", UFRGS, Porto Alegre-RS, Brazil

Oct 2025 "Statistical Inferences and Predictions for Areal Data and Spatial Data Fusion with Hausdorff-Gaussian Processes", UCSC, Santa Cruz-CA, USA

Sep 2024 "Process-based species distribution models for improving predictive performance of climate-driven range shifts", Stockholm Resilience Centre, Sweden

Nov 2018 "Web Scraping, Web Services & APIs", 1st Datathon–Universidade Federal do Rio Grande do Sul, Porto Alegre-RS, Brazil

Aug 2018 "Analyzing Brazilian public data", Universidade Federal de Minas Gerais, Belo Horizonte-MG, Brazil

Contributed Talks and Posters

Aug 2025 "`drmr`: A Bayesian approach to Dynamic Range Models in `R`", ESA 2025, Baltimore, MD (Talk)

Aug 2024 "From Point to Polygon: A Unified Framework for Modeling Spatial Dependence", JSM 2024, Portland, OR (Talk)

May 2024 "Beyond Traditional Disease Mapping: Spatiotemporal Analysis of Tuberculosis", 37th NESS, Storrs, CT (Talk)

Sep 2023 "Hausdorff–Gaussian Process: Unifying Spatial Data Analysis", EnviBayes Workshop, Fort Collins, CO (Poster)

Jun 2022 "An Unified Framework for Point-Level, Areal, and Mixed Spatial Data", ISBA World Meeting, Montreal, CA (Talk)

May 2022 "Model-Based Voronoi Linkage for Spatial Analysis", 35th NESS, Storrs, CT (Talk)

Oct 2021 "Spatially Misaligned Data: An Application to the 2018 Brazilian Election", 34th NESS, Storrs, CT (Poster)

Oct 2020 "Automatic Team Selection in a Fantasy Football Game", 2nd UCSAS, Storrs, CT (Poster)

Oct 2019 "Bayesian Hierarchical Models Applied to Fantasy Games", 1st UCSAS, Storrs, CT (Poster)

Nov 2018 "Voronoi Data Linkage: Extracting Data from Polygons to Points", 1st CSDS, Salvador, Brazil (Talk)

May 2018 "Voronoi Cells: Visualizing Intramunicipality Votes Distribution", 63rd RBRAS, Curitiba, Brazil (Talk)

Mar 2018 "A Bayesian Mixture Model for Player Performance in Fantasy Games", XIV EBEB, Rio de Janeiro, Brazil (Poster)

Teaching Experience

Principal Instructor — **Spring 2021–Spring 2022**
University of Connecticut — *Storrs, CT*

- STAT 3445: Introduction to Mathematical Statistics II

Teaching Assistant — **Fall 2019–Fall 2020**
University of Connecticut — *Storrs, CT*

- STAT 3445: Introduction to Mathematical Statistics II
- STAT 1000Q: Introduction to Statistics I

Lecturer — **Spring 2019**
Uniritter — *Porto Alegre, Brazil*

- Taught a professional development course on Data Analysis with R for graduate students.

Mentoring Experience

Co-Leader & Mentor, EEB Statistics Support Group **2024–2025**
University of California Santa Cruz *Santa Cruz, CA*

- Co-led a weekly statistical support group for graduate students and postdocs in Ecology and Evolutionary Biology.
- Mentored peers on data analysis challenges and the application of advanced statistical methods to their research.
- Developed and presented hands-on tutorials and coding exercises, available on the group's GitHub.

Organizer & Instructor, Student Workshop Series on Computing **2024**
University of Connecticut, Department of Statistics *Storrs, CT*

- Designed and instructed a weekly workshop series for doctoral students on computational statistics and high-performance computing.
- Mentored junior graduate students in creating professional academic websites; workshop materials are available online.

Group Coordinator (2017–2018) & Member (2016–2017), Stats4Good **2016–2018**
Universidade Federal de Minas Gerais *Belo Horizonte, BR*

- Led a pro-bono data science group of graduate students applying statistical methods to address social issues in Brazil.
- Directed two major data analysis projects: one analyzing public expenditures to detect misuse of funds (Veraz), and another modeling crime data to study the under-notification of sexual assault (GESEM).
- Authored and managed the publication of project findings on the group's technical blog.

Professional Experience

Statistical Consultant **Aug 2023–May 2024**
Statistical Consulting Services, University of Connecticut *Storrs, CT*

- Provided statistical consulting to researchers across various disciplines.

Statistical Consultant **Sep 2020–Dec 2023**
Biostatistics Center, University of Connecticut Health Center *Farmington, CT*

- Provided statistical consulting to researchers in the health sciences.

Graduate Assistant **Aug 2022–May 2023**
High Performance Computing, University of Connecticut *Storrs, CT*

- Supported HPC users, managed software environments, and developed Apptainer/Singularity containers to ensure research reproducibility.

Data Scientist **Dec 2018–June 2019**
Agibank *Porto Alegre, Brazil*

- Developed and deployed machine learning models for credit risk and debt collection.

Undergraduate Research Assistant (AMBES-Petrobras Project) **Apr 2015–Dec 2015**
Universidade Federal do Rio Grande do Sul *Porto Alegre, Brazil*

- Applied geostatistical models to predict the environmental impact of oil platforms' chemical characteristics on the ocean.
- *Supervisor: Prof. Fernando Pulgati*

Undergraduate Research Assistant **May 2011–Dec 2014**
Universidade Federal do Rio Grande do Sul *Porto Alegre, Brazil*

- Investigated the impact of social inequalities on public health outcomes in Brazil.
- *Supervisor: Prof. Sergio Luiz Bassanesi*

Digital Intelligence Analyst **Sep 2016–Mar 2017**
Grupo Conectt *Porto Alegre, Brazil*

- Developed monthly interactive reports and dashboards using web data.
- Created predictive models to identify leads with a high probability of conversion.

Census Supervisor Agent **Mar 2010–Nov 2010**
Instituto Brasileiro de Geografia e Estatística (IBGE) *Brazil*

- Organized, supervised, and monitored field data collection for the 2010 Brazilian National Census.

Service

Associate Editor **2025–Present**
Journal of Data Science

Referee **2023–Present**
Ad-hoc Reviewer for Various Journals

- *Biostatistics*,
- *Journal of the Royal Statistical Society: Series A*,
- *International Statistical Review*,
- *Journal of Data Science*,
- *Environmetrics*,
- *Nature Communications*

Cluster Administrator **2020–2024**
University of Connecticut, Department of Statistics *Storrs, CT*

- Management of the `R` packages and system requirements on the Cluster. Development and maintenance of `singularity` containers to assure analyses reproducibility.

Technical Skills

Programming: `R`, `Stan`, `Nimble`, `Julia`, `C++`, `Python`, `SQL`

Tools: Git, Docker, Apptainer/Singularity, SLURM, LaTeX, Quarto, Emacs, Shiny

References

Jun Yan
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Malin Pinsky
Associate Professor of Ecology
University of California Santa Cruz
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Additional references available upon request.