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 awarded en route, 2021.

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*.

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. (2024a). 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

Godoy, **L. d. C.**, Prates, M. O., & Yan, J. (2024b). Voronoi linkage between mismatching voting stations and census tracts in analyzing the 2018 Brazilian presidential election data. *New England Journal of Statistics in Data Science*.

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

- "Statistical Inferences and Predictions for Areal Data and Spatial Data Fusion with Hausdorff-Gaussian Processes", UCSF, San Francisco-CA, USA Mar 2025
- "Statistical Inferences and Predictions for Areal Data and Spatial Data Fusion with Hausdorff-Gaussian Processes", UFRGS, Porto Alegre-RS, Brazil Nov 2024
- "Statistical Inferences and Predictions for Areal Data and Spatial Data Fusion with Hausdorff-Gaussian Processes", UCSC, Santa Cruz-CA, USA Oct

2025

- "Process-based species distribution models for improving predictive performance of climate-driven range shifts", Stockholm Resilience Centre, Sweden Sep 2024
- "Web Scraping, Web Services & APIs", 1st Datathon–Universidade Federal do Rio Grande do Sul, Porto Alegre-RS, Brazil Nov 2018
- "Analyzing Brazilian public data", Universidade Federal de Minas Gerais, Belo Horizonte-MG, Brazil Aug 2018

Contributed Talks and Posters

- "From Point to Polygon: A Unified Framework for Modeling Spatial Dependence", JSM 2024, Portland, OR (Talk) Aug 2024
- "Beyond Traditional Disease Mapping: Spatiotemporal Analysis of Tuberculosis", 37th NESS, Storrs, CT (Talk) May 2024
- "Hausdorff–Gaussian Process: Unifying Spatial Data Analysis", EnviBayes Workshop, Fort Collins, CO (Poster) Sep 2023
- "An Unified Framework for Point-Level, Areal, and Mixed Spatial Data", ISBA World Meeting, Montreal, CA (Talk) Jun 2022
- "Model-Based Voronoi Linkage for Spatial Analysis", 35th NESS, Storrs, CT (Talk) May 2022
- "Spatially Misaligned Data: An Application to the 2018 Brazilian Election", 34th NESS, Storrs, CT (Poster) Oct 2021
- "Automatic Team Selection in a Fantasy Football Game", 2nd UCSAS, Storrs, CT (Poster) Oct 2020
- "Bayesian Hierarchical Models Applied to Fantasy Games", 1st UCSAS, Storrs, CT (Poster) Oct 2019
- "Voronoi Data Linkage: Extracting Data from Polygons to Points", 1st CSDS, Salvador, Brazil (Talk) Nov 2018
- "Voronoi Cells: Visualizing Intramunicipality Votes Distribution", 63rd RBRAS, Curitiba, Brazil (Talk) May 2018
- "A Bayesian Mixture Model for Player Performance in Fantasy Games", XIV EBEB, Rio de Janeiro, Brazil (Poster) Mar. 2018

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*

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
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Additional references available upon request.