

Owen Visser

☎ (904) 304-9475 | ✉ owviss@gmail.com | in owenvisser | 🌐 owenvisser.github.io

Summary

Postdoctoral biostatistician developing statistical and machine-learning methods for complex biomedical data, with emphasis on irregular longitudinal observations and clustered outcomes. Research spans graph convolutional neural networks, generative modeling, estimating equations, and computational genomics. Experienced in statistical software, GPU-accelerated Python modeling, and web-based analytical reporting.

Education

Doctoral: Ph.D. in **Biostatistics**, *University of Florida*, USA 2026

- Advisor: Dr. Somnath Datta
- Dissertation: *Contributions to Biostatistics and Data Science: scRNA-seq Cluster Validation, AMR Prediction, Oral Health Data, and Sentiment Analysis*
- GPA: 3.8/4.0

Master's: M.S. in **Statistics**, *University of North Florida*, USA 2021

- Advisor: Dr. Ping Sa
- Thesis: *Upper-Sided EWMA-Based Distribution-Specific Tolerance Limits*
- GPA: 3.8/4.0

Baccalaureate: B.S. in **Mathematics**, *University of North Florida*, USA 2019

- Minor: Physics
- GPA: 3.2/4.0

Research Interests

- Clustered and Longitudinal Data Analysis
- Graph Neural Networks and Irregularly Sampled Time Series
- Generative Modeling and Deep Learning
- Statistical Programming and Computational Methodology
- Multi-omics Analysis and Natural Language Processing
- Computational Genomics and Natural Language Processing

Research Experience

Postdoctoral Associate Aug. 2026 – Present

Department of Biostatistics, University of Florida

Supervisor: Dr. Arkaprava Roy

- Develop graph convolutional neural network methods for irregularly observed longitudinal and time-series data.
- Designed a modular Python implementation of longitudinal graph convolution and developed a theoretical correspondence with conventional graph convolutional networks.
- Investigate generative models for irregular longitudinal data and compare predictive performance across deep-learning architectures.
- Implement GPU-accelerated model training and evaluation workflows in Python, including systematic hyperparameter tuning.

Graduate Research Assistant 2023 – 2026

Department of Biostatistics, University of Florida

- Developed weighted estimating-equation methods for marginal association measures in clustered oral health outcomes.
- Constructed simulation studies to evaluate bias, standard error estimation, and confidence-interval coverage under informative cluster and subgroup size.

- Optimized subgroup informative testing programs to function on large-scale datasets.
- Built large-scale bioinformatics workflows for heterogeneous bacterial sequencing data, including preprocessing, alignment, feature construction, normalization, and model-ready data assembly.
- Developed and evaluated machine-learning models for antimicrobial resistance prediction, including random forests, penalized logistic regression, gradient boosting, and ensemble classifiers.
- Adapted cluster-validation methods for single-cell RNA sequencing and developed rank-based procedures for combining multiple clustering results.
- Analyzed social media discourse using sentiment classification, topic modeling, and natural language processing in collaboration with the *Department of Community Dentistry, University of Florida* in 2025.
- Prepared research outputs for manuscripts, conference presentations, grant materials, and interdisciplinary collaborators.

Research in Progress

Graph Convolutional Neural Networks for Irregular Longitudinal Data

Collaborator: Dr. Arkaprava Roy, University of Florida

- Developing a modular graph convolutional neural network framework in Python for irregularly observed longitudinal data, incorporating GPU-accelerated computation.
- Establishing theoretical connections between the proposed framework and conventional graph convolutional neural networks, including mathematical equivalence of their formulations.

Generative Modeling and Deep Learning for Irregular Longitudinal Data

Collaborator: Dr. Arkaprava Roy, University of Florida

- Investigating deep generative modeling approaches for simulating irregularly observed longitudinal data.
- Conducting comparative evaluations of deep learning methods for longitudinal prediction, including systematic hyperparameter optimization and predictive performance assessment.

Generalized Estimating Equations for Informative Clustered Data

Collaborators: Dr. Somnath Datta and Dr. Samuel Anyaso-Samuel

- Finalizing weighted generalized estimating equation methodology for estimating marginal association measures between paired outcomes under informative cluster and subgroup sizes, with a revised preprint available on arXiv.
- Developing an accompanying R package to implement the proposed estimating procedures for clustered data analysis.

Publications

Preprints

4. **Visser, O.**, & Datta, S. Estimating Association Between Paired Outcomes in Clustered Data with Informative Subgroup Size. *arXiv*, 2605.16108 (2026). <https://doi.org/10.48550/arXiv.2605.16108>

Accepted & Published Articles

3. **Visser, O.**, Agboli, V., & Datta, S. A Novel Bioinformatics Pipeline and a Machine Learning Approach for Antimicrobial Resistance Phenotypic Prediction. *Bioinformatics and Biology Insights*, (2026). <https://doi.org/10.1177/11779322261453756>
2. **Visser, O.**, Singhal, N., Katta, M., Pinsky, E., Datta, S., & Singhal, A. Unpacking Twitter Discourse on Fluoride and Related Topics During the 2024 U.S. Presidential Election. *The Journal of the American Dental Association*, (2026). <https://doi.org/10.1016/j.adaj.2026.03.007>
1. **Visser, O.** & Datta, S. Integrating Multiple Clustering Techniques and Performance Measures via Ranking for scRNA-seq Data. *Statistics in Medicine* (2025). <https://doi.org/10.1002/sim.70331>

Research Software

- `sclValid` (2026). R package for ensemble validation and ranking of clustering solutions, including internal, external, and sample-perturbation stability measures. Co-developed with Dr. Somnath

Datta; author and maintainer. Available on CRAN: <https://cran.r-project.org/package=sclValid>.

- **Estimating-equation software (in development).** Collaborating with Dr. Somnath Datta and Dr. Samuel Anyaso-Samuel on an R package related to weighted estimating equations for paired outcomes in clustered data.

Conference Presentations

- **2026 Poster Presentation.** Visser, O., Singhal, N., Katta, M., Pinsky, E., Datta, S., & Singhal, A. *Unpacking Twitter Discourse on Fluoride and Related Topics During the 2024 U.S. Presidential Election*. IADR, San Diego, California, U.S.
- **2025 Oral Presentation.** Visser, O., Agboli, V., & Datta, S. *Antimicrobial Resistance Prediction via Binary Ensemble Classifier and Assessment of Variable Importance*. CAMDA, Liverpool, U.K.
- **2024 Oral Presentation.** Visser, O. & Datta, S. *Statistical Measures for the Evaluation of Clustering Methods on Single Cell Data*. CAMDA, Montreal, Canada.
- **2024 Poster Presentation.** Visser, O. & Datta, S. *Cluster Validation for Single Cell Data: Formulation of Performance Measures, Rank Aggregation, and Optimal Selection of Methods and Parameters*. Theory & Foundations of Statistics in the Era of Big Data, Tallahassee, Florida, U.S.

Honors & Awards

- **2025 3rd Prize Presentation Award**, CAMDA, Liverpool, U.K. *Antimicrobial Resistance Prediction via Binary Ensemble Classifier and Assessment of Variable Importance*.

Teaching & Mentorship

Graduate Student Mentor

2025 – 2026

Department of Biostatistics, University of Florida

- Mentored an M.S. student through their capstone project under the supervision of Dr. Somnath Datta, with guidance on statistical analysis and programming.
- Led the student in consulting groups involving client communication, applied statistical reasoning, and project management.
- Reviewed technical work and written materials, contributing to timely completion of degree requirements.

Graduate Teaching Assistant

2022 – 2023

Department of Biostatistics, University of Florida

- Developed graduate-level instructional materials for core biostatistics courses.
- Provided programming examples for core biostatistics courses.
- Assembled supplemental course notes for three of the four core biostatistics courses.

Visiting Instructor

2021 – 2022

Department of Mathematics & Statistics, University of North Florida

- Developed course materials aligned with university curricula.
- Taught in both in-person and online formats.
- Prepared lectures, assignments, examinations, and grading materials.
- Courses taught:

MAC 1105 College Algebra

MAC 1105C College Algebra with Recitation

STA 2023 Introductory Statistics

Professional Experience

Web Development & Data Visualization Contractor (Part-Time)

Sep. 2026 – Present

International Society for Computational Biology (ISCB)

- Develop statistical visualizations and summary tables for ISCB leadership to support operational decision-making.
- Build JavaScript-based reporting interfaces within a Slim 4 (PHP) web application, integrating back-

- end data processing with client-side visualizations.
- Collaborate with the Lead Technologist on privacy-conscious server-side data handling, limiting exposure of underlying datasets in browser-delivered content.

Professional Affiliations & Service

International Society for Computational Biology

2024 – Present

Member and ISMB Event Staff

- Supported conference operations at ISMB 2024 in Montréal, ISMB/ECCB 2025 in Liverpool, and ISMB 2026 in Washington, D.C.
- Provided technical support for scientific sessions, including presentation setup, computer operation, slide management, and audiovisual troubleshooting.
- Worked directly with keynote speakers and invited presenters to coordinate presentation materials and support the delivery of scientific sessions.
- Assisted with conference web content, video processing, and the preparation and upload of presentation recordings.
- Coordinated with ISCB leadership and venue staff to support room readiness, attendee navigation, and conference logistics.

International Association for Dental, Oral, and Craniofacial Research

2025 – Present

Member

Reviewer, ISMB-YBS Student Challenge

2026

President, Biostatistics Student Organization

2024 – 2025

University of Florida

Departmental Student Handbook Revision

2026

Department of Biostatistics, University of Florida

- Assisted with formatting and content revisions to the Biostatistics student handbook.

Graduate Coursework

Stat. Learning App.	Stat. Methods 1 & 2	Applied Survival Analysis
Adv. Stat. Learning App.	Adv. Biostat. Methods 1 & 2	Large Sample Theory
Analysis of Multivariate Data		

Technical Skills

Programming	R, Python, JavaScript, PHP (Slim 4), SQL, C++, SAS, Bash, C#, C
ML / Computing	Graph Neural Networks, Generative Modeling, PyTorch, GPU-Accelerated Computing, Hyperparameter Optimization
Tools	Git, RStudio, PyCharm, Bowtie2, KMA, ResFinder, NCBI EDirect, FastQC, KneadData, OBS