Lauren Shriver

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PROFESSIONAL SUMMARY

Applied mathematician and computational scientist with graduate-level training in applied mathematics and computational biology, hands-on research experience in mathematical modeling, and ongoing independent work in dynamical systems, neural dynamics, and statistical mechanics. Brings a demonstrated capacity for rigorous quantitative reasoning, formal problem design, and scientific communication across mathematics, physics, and computational neuroscience. Actively developing a public portfolio of scientific simulation and computational neuroscience projects at github.com/eigenscribe.

EDUCATION

College of William and Mary — Williamsburg, VA
M.S. Applied Mathematics and Computational Biology. — *2016-2017*

Christopher Newport University — Newport News, VA
B.S. Neuroscience, Psychology, and Chemistry. — *2009-2015*

EXPERIENCE

Research Assistant — Jan 2016 – May 2017
College of William and Mary — *Williamsburg, VA*

- Modeled ligand-binding kinetics of dimeric metabotropic glutamate receptors (mGluRs) as a candidate drug-target system, mapping full ligand-binding curves to adjacency matrices via the Cartesian product of monomer subunits using graph-theoretic techniques in MATLAB.
- Presented research findings at two one-hour seminars: a q-bio summer program and a departmental biomathematics meeting, communicating early-phase results to interdisciplinary audiences.

AI Trainer, Neuroscience — Jul 2025 – Present
Handshake AI — *Remote*

- Design multi-modal evaluation tasks and adversarial prompts to probe scientific and mathematical reasoning in large models.
- Build Hodgkin-Huxley simulators to generate controlled test cases for failure-mode analysis.

AI Trainer, Mathematics and Neuroscience — Feb 2024 – Present
Outlier — *Remote*

- Designed mathematical reasoning prompts and gold-standard solutions spanning linear algebra, discrete mathematics, calculus, probability, and biophysical modeling; adversarial prompts focused on linear algebra and discrete math to surface model failure modes.
- Evaluated model outputs for logical consistency, mathematical rigor, and conceptual correctness; contributed upper-undergraduate and lower-graduate-level prompts in biology, neuroscience, and statistical mechanics across multiple AI training platforms.

Tutor, Math, Chemistry, and Neuroscience — Sep 2022 – Present
Nerdy, Inc. — *Remote*

- Deliver individualized instruction across calculus, probability and statistics, linear algebra, discrete mathematics, trigonometry, physics, physical chemistry, and systems neuroscience.
- Developed structured problem walkthroughs emphasizing first-principles reasoning; retained by returning students for subject-area continuity across semesters, including a student who specifically requested continued work after a prior linear algebra engagement.

PROJECTS

Scientific Simulation Portfolio https://lshriver.github.io/my-portfolio/ — Ongoing
Online Showcase

- Building a public portfolio aggregating scientific simulation work, including computational neuroscience projects, a Zenscical site, and a PreTeXt site; active projects include physics-informed machine learning at the undergraduate-to-graduate level.

Computational Neuroscience Notebooks https://github.com/eigenscribe/scribing — Ongoing
GitHub Repository

- Develop pedagogical and evaluative notebooks covering neural dynamics, synchronization, causal graphs, and statistical mechanics; repository maintained under the eigenscribe GitHub organization built specifically for portfolio projects.

CERTIFICATIONS

- AI Training and Evaluation, Handshake (Issued Oct 2025)
- Model Validation I: Trainer, Handshake (2025)
- AI in STEM: Real-World Skills, CheggSkills (2025)

- Time-Series Modeling, Statsmodels Analysis, Quantum Random Walks, Educative.io
- JavaScript Algorithms; Responsive Web Design, freeCodeCamp

SKILLS

Mathematical Domains: calculus, differential equations, probability and statistics, linear algebra, discrete mathematics, dynamical systems, applied mathematical modeling

Scientific Computing: ODE/PDE modeling, time-series analysis, neural dynamics (Hodgkin-Huxley, Kuramoto), causal inference, quantum walks, physics-informed machine learning, scientific simulation

Programming: Python, MATLAB, LaTeX, Git

AI Evaluation: annotation standards, adversarial prompting, reasoning audits, dataset design, evaluation calibration

RESEARCH INTERESTS

- Mathematical modeling; dynamical systems; statistical mechanics; neural dynamics (Hodgkin-Huxley, Kuramoto); causal inference; quantum walks; physics-informed machine learning; scientific simulation.