

# Forwah Amstrong Tah, Ph.D.

## Curriculum Vitae

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Forwah2023

## Summary

Ph.D. physicist specializing in computational neuroscience, with 10+ years teaching secondary and high-school physics and 3+ years as a self-employed software developer. Skilled in mathematical modeling, numerical simulation, statistical analysis, machine learning, and full-stack Python development. Proven ability to design and deploy interactive desktop and web applications, present research at national conferences, and deliver engaging, data-driven instruction. Seeking roles in scientific research, data science, software engineering, or higher education.

## Experience

- 2023–Present **Founder & Lead Developer, LMS (Self-Employed)**, Yaoundé, Cameroon
- Built **Texam**, a full-stack quiz-generation platform (Django REST Framework, Next.js), boosting exam-generation throughput by 200%.
  - Developed **Classroom Insights**, automating Excel-based student analytics and cutting manual grading errors by 95%.
  - Created Python GUIs including a **Wordle Clone** and **PdfResearch**, enhancing user engagement and enabling rapid multi-folder document searches.
  - Designed interactive dashboards with Power BI and Dash to visualize Diversity Visa lottery entrant statistics for strategic, data-driven decision-making.
- 2013–Present **Secondary & High-School Physics Teacher, Ministry of Secondary Education (MINESEC)**, Yaoundé, Cameroon
- Design and deliver competency-based curricula for learners aged 10–19, incorporating digital simulations and interactive lesson assets.
  - Develop assessments and pedagogy reports, track student performance, and mentor underperforming learners to boost outcomes.
  - Lead project-based labs and public demonstrations, fostering critical thinking and scientific inquiry.
- 2018–2022 **Ph.D. Researcher, Biophysics, University of Yaoundé I**, Yaoundé, Cameroon
- Modeled single-cell neuronal dynamics; performed bifurcation analysis on ODE/PDE neuron models.
  - Analyzed neural time-series data using Python, MATLAB, and numerical continuation tools.
  - Authored two peer-reviewed publications and presented findings at CONFCAYS 2021.

## Software Projects

- Texam (2024–Present) Full-stack quiz-generation platform (Django REST Framework, Next.js) that automates exam workflows.
- Boosted question-generation throughput by 200%.
  - Implemented JWT-based auth, dynamic templating, and PDF export(under development).
  - Deployed backend in Docker and front end on Vercel with CI/CD.
- Try Live App
- DV-Lottery Statistics (2023) Interactive analytics dashboard (Django, Dash, Plotly) for Diversity Visa entrant data.
- Visualized selection probabilities and demographic trends.
  - Optimized server-side caching for sub-second load times.
- Try Live App

- Strong Book Reviews** Backend API (Django, Bootstrap) for community book reviews and ratings.  
 (2023)
  - Designed REST endpoints for reviews, comments, and user profiles.
  - Enforced role-based permissions and input validation.  
 Try Live App
- Power BI Capstone** Business-intelligence dashboard (Power BI, Excel) tracking KPIs and sales metrics.  
 (2024)
  - Built interactive reports on revenue, customer segmentation, and churn.
  - Automated data ETL via Power Query for daily refreshes.  
 Try Live App
- Classroom Insights** Teacher-analytics suite (Python, PyQt5, Pandas) for student-performance tracking.  
 (2023)
  - Computed descriptive statistics and flagged at-risk students, cutting manual grading errors by 95%.
  - Persisted results in SQLite with login and historical retrieval.  
 Download App
- PdfResearch** Multithreaded document-search GUI (Python, PyQt5, Matplotlib) across .pdf, .docx, and .txt.  
 (2023)
  - Plotted term-frequency graphs and exportable CSV reports.
  - Packaged cross-platform installer with update checks.  
 Download App

## Education

- 2018–2022 **Ph.D. in Physics, Biophysics**, *University of Yaoundé I*, Yaoundé, Cameroon  
  - Thesis awarded highest grade (A+); specialized in theoretical and computational neuroscience.
  - Focus: bifurcation analysis of diffusion-coupled neuron models.
- 2015–2018 **M.Sc. in Physics**, *University of Yaoundé I*, Yaoundé, Cameroon  
  - Soft matter physics and nonlinear wave analysis in excitable media.
  - Graduated top of class (GPA 3.42); best overall student in Biophysics Research Group.
- 2009–2012 **B.Ed. in Physics**, *University of Bamenda*, Bamenda, Cameroon

## Publications

- 2020 Tah, F. A., Tabi, C. B., & Kofané, T. C. "Hopf bifurcations on invariant manifolds of a modified FitzHugh-Nagumo model." *Nonlinear Dynamics*, 102(1), 311–327.
- 2021 Tah, F. A., Tabi, C. B., & Kofané, T. C. "Pattern formation in the FitzHugh-Nagumo neuron with diffusion relaxation." *Chaos, Solitons & Fractals*, 147, 110974.

## Conferences

- Aug 2021 CONFCAYS, Yaoundé, Cameroon. Podium: "Hopf bifurcations on invariant manifolds of a modified FitzHugh-Nagumo model."
- Jul 2022 CERN HST Program, Geneva, Switzerland. Podium: "Better ways to teach particle detectors in the classroom."

## Technical Skills

- Programming: Python (pandas, NumPy, scikit-learn), MATLAB, SQL, HTML5/CSS3/JavaScript(React), Django, PyQt5.
- Data Analysis & ML: statistical modeling, time-series analysis, predictive analytics.
- Tools & Workflow: Git/GitHub, Docker, LaTeX, Overleaf, VS Code.

## Teaching & Research Skills

- Lesson & assessment planning, competency-based evaluation, digital pedagogy.
- Scientific writing, peer review, public speaking.

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## Languages

English C1 (advanced proficiency)

French C1 (advanced proficiency)

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## Hobbies

Fitness, nutrition, and competitive gaming