

## Professional Summary

---

A passionate mathematics educator who is interested in improving student learning in mathematics and modeling biological models with Linear and Nonlinear Differential equations, and app mathematical modeling and games design that involve the use of Numerical and Probabilistic Analysis.

## Qualifications

---

- Innovative lesson planning
- Tailored curriculum plans
- Interactive teaching/learning
- Inquiry-based learning
- Audio-visual aid implementation
- Excellent classroom management
- Positive learning environment
- Effectively work with board, staff, and general public
- Group learning mechanics
- Student motivation

## Experience

---

### **Instructor of Mathematics**

August 2017 to Present (2 months)

University of West Georgia – Carrollton, Georgia

- Served as an instructor for undergraduates in College Algebra, Pre-Calculus, and Analytical Geometry and Calculus I
- Reviewed and corrected assignments with an emphasis on providing feedback to each student
- Established and maintained a positive relationship with students, and colleagues, fostering an environment of open communication and support
- Prepared lesson plans and delivered lectures

### **Professor of Mathematics**

August 2014 to August 2017 (3 years)

Atlanta Metropolitan State College – Atlanta, Georgia

- Served as an instructor for undergraduates in College Algebra, Pre-Calculus, and Analytical Geometry and Calculus I, Calculus II, Calculus III, Vector Calculus, Differential Equations, Partial Differential Equations, Numerical Analysis,
- Reviewed and corrected assignments with an emphasis on providing feedback to each student
- Established and maintained a positive relationship with students, and colleagues, fostering an environment of open communication and support
- Prepared lesson plans and delivered lectures

### **Online Professor of Mathematics**

April 2014 to Present (3 years 5 months)

eCore with University of West Georgia – Carrollton, Georgia

- Serving as an instructor for undergraduates in Mathematical Modeling, College Algebra, Analytical Geometry, Pre-Calculus, and Calculus sequences
- Reviewed and corrected assignments with an emphasis on providing feedback to each student
- Established and maintained positive relationships with students, and colleagues, fostering an environment of open communication and support
- Prepared lesson plans and delivered lectures
- Contacted each new student to welcome them to and introduce the course.
- Monitored closely the student's progress relative to their individual course schedule.
- Provided timely and appropriate feedback to student for their assignments.
- Monitored and participated in the Online Instruction Community forum/discussion group/s.
- Managed to establish contact with student inactive for over 3 days, and informed the mentor if a student is inactive for more than 5-days or more.

### **Instructor of Mathematics**

August 2013 to May 2014 (10 months)

University of West Georgia – Carrollton, Georgia

- Served as an instructor for undergraduates in College Algebra, Pre-Calculus, and Analytical Geometry and Calculus I
- Reviewed and corrected assignments with an emphasis on providing feedback to each student
- Established and maintained a positive relationship with students, and colleagues, fostering an environment of open communication and support
- Prepared lesson plans and delivered lectures

### **Adjunct Professor of Mathematics**

January 2013 to Present (4 years 1 month)

Atlanta Technical College – Atlanta, Georgia

- Served as an instructor for undergraduates in Mathematical Modeling, Foundation of Mathematics, and College Algebra
- Reviewed and corrected assignments with an emphasis on providing feedback to each student
- Established and maintained a positive relationship with students, and colleagues, fostering an environment of open communication and support
- Prepared lesson plans and delivered lectures
- Contacted each new student to welcome them to and introduce the course.
- Monitored closely the student's progress relative to their individual course schedule.
- Provided timely and appropriate feedback to student for their assignments.
- Monitored and participated in the Online Instruction Community forum/discussion group/s.
- Managed to establish contact with student inactive for over 3 days, and informed the mentor if a student is inactive for more than 5-days or more.

### **Professor of Mathematics**

January 2013 to August 2013 (8 months)

Atlanta Metropolitan State College – Atlanta, Georgia

- Served as an instructor for undergraduates in College Algebra, Pre-Calculus, and Analytical Geometry and Calculus I
- Reviewed and corrected assignments with an emphasis on providing feedback to each student
- Established and maintained a positive relationship with students, and colleagues, fostering an environment of open communication and support
- Prepared lesson plans and delivered lectures

### **Math Support Teacher**

May 2012 to December 2012 (8 months)

Georgia State University – Atlanta, Georgia

- Served as tutor and teacher for the following courses: Statistics, College Algebra, Pre-Calculus, Mathematical Modeling, and Calculus
- Assisted student-athletes with time management, study skills, test preparation, and test taking skills  
Helped develop learning strategies for the student-athletes with specific deficiencies
- Planned the student athletes semester
- Updated the Panther Assignment Tracker with weekly grades
- Communicated any concerns or potential problems to the academic coordinator
- Completed session reports after each tutoring session

### **Graduate Research Assistant**

August 2009 to August 2012 (3 years 1 month)

Georgia State University– Atlanta, Georgia

- Implemented MathLab Code to simulate Cellular Neural Networks using the Winner-Take-All Function with blinking connections for Artificial Intelligence
- Created MatLab simulations to search for equilibria and study structural properties
- Presented results in hour-long seminar style talk to full-time research staff
- Examined convergence conditions and error between numerical and analytical solution

### **Mathematics Instructor**

June 2009 to August 2012 (3 years and 3 months)

Georgia State University– Atlanta, Georgia

- Served as an instructor for undergraduates in Mathematical Modeling, Foundation of Mathematics, and College Algebra, Geometry, Calculus, and Differential Equations
- Reviewed and corrected assignments with an emphasis on providing feedback to each student
- Established and maintained a positive relationship with students, and colleagues, fostering an environment of open communication and support
- Prepared lesson plans and delivered lectures

### **Math Support Teacher**

May 2011 to August 2011 (4 months)

Georgia State University– Atlanta, Georgia

- Served as tutor and teacher for the following courses: Statistics, College Algebra, Pre-Calculus, Mathematical Modeling, and Calculus
- Assisted student-athletes with time management, study skills, test preparation, and test taking skills
- Helped develop learning strategies for the student-athletes with specific deficiencies
- Planned the student athletes semester
- Updated the Panther Assignment Tracker with weekly grades
- Communicated any concerns or potential problems to the academic coordinator
- Completed session reports after each tutoring session

### **Math Support Teacher**

June 2010 to August 2010 (3 months)

Georgia State University– Atlanta, Georgia

- Served as tutor and teacher for the following courses: Statistics, College Algebra, Pre-Calculus, Mathematical Modeling, and Calculus
- Assisted student-athletes with time management, study skills, test preparation, and test taking skills
- Helped develop learning strategies for the student-athletes with specific deficiencies
- Provided enrichment activities to improve student learning with mathematical concepts (*Majority of students went from being F students to being C and B students.*)
- Planned the student athletes semester
- Updated the Panther Assignment Tracker with weekly grades
- Communicated any concerns or potential problems to the academic coordinator
- Completed session reports after each tutoring session

### **Supplemental Math Instructor**

August 2009 to December 2009 (5 months)

Georgia State University– Atlanta, Georgia

- Served as an instructor for institution’s student retention program for the following courses: College Algebra/Math Modeling
- Arrange and facilitate regular, outside-of-class study sessions throughout the term
- Attend all meetings and participate in discussions during the semester to enhance the SI Leader experience and SI program
- Assist in the collection and reporting of evaluation data regarding selected course
- Established and maintained a positive relationship with students, and colleagues, fostering an environment of open communication and support
- Prepared lesson plans and delivered lectures
- Provided enrichment activities to improve student learning with mathematical concepts (*Majority of students went from being F students to being C and B students.*)

### **Math Complex Tutor**

June 2008 to July 2009 ( 1 year 1 month)

Georgia State University– Atlanta, Georgia

- Tutored over 20 students each day in statistics, college algebra, linear algebra, Pre-Calculus, and Calculus, Discrete Mathematics, Geometry
- Established and maintained a positive relationship with students, and students’ professor, fostering an environment of open communication and support
- Provided enrichment activities so that students will have a more in-depth understanding of certain mathematical concepts (*Majority of students went from being F students to being B students*)

### **High school Math Teacher**

June 2007 to June 2008 ( 1 year)

Newton High School– Covington, Georgia

- Served as an instructor for grades 9<sup>th</sup>, 10<sup>th</sup>, 11<sup>th</sup>, and 12<sup>th</sup>.
- Administered diagnostic tests to determine individual needs of students
- Reviewed and corrected assignments with an emphasis on providing feedback to each student
- Established and maintained a positive relationship with students, and colleagues, fostering an environment of open communication and support
- Tutored over six teens after school that were having difficulty in making their grades. (Student improved their Benchmark test scores by 40%)
- Assisted course tutors in the preparation for individual tutoring sessions

## Education

---

### **Georgia State University, Atlanta 2018**

Atlanta, Georgia, US

Computational Mathematics and Mathematics Education, Ph. D.

### **Georgia State University, Atlanta 2012**

Atlanta, Georgia, US

Computational and Applied Mathematics, M. S.

### **Morehouse College, Atlanta 2004**

Atlanta, Georgia, US

Computer Science, B. S.

## Courses

---

Doctor of Philosophy (Ph.D.) Computational Mathematics and Education, Georgia State University

Epistemology Adv. Math Concepts	MATH 8620
Analysis I	MATH 6661
Real Analysis I	MATH 8110
Learning Theories Collegiate Mathematics Education	MATH 9136
Trends/Issues of Teaching Mathematics	EDMT 8550
Quantitative Methods and Analysis I	EPRS 8530
Seminar in Teaching and Learning	EDCI 8970
Studying of Learning/Instruction in Mathematics	EDMT 8290
Ethnomathematics and Historical Cultural Development of Mathematics	EDMT 8820
Quantitative Methods and Analysis II	EPRS 8540
Numerical Analysis I	Math 6610
Numerical Analysis II	Math 6620
Qualitative Research in Education I	EPRS 8500
Qualitative Research in Education II	EPRS 8510
Vector Calculus	Math 6258
Mathematical Biology	Math 6010

Master of Science (M.S.) Computational and Applied Mathematics, Georgia State University

Numerical Linear Algebra	Math 8620
Numerical Analysis I	Math 6610
Numerical Analysis II	Math 6620
Partial Differential Equations	Math 6265
Teaching College Mathematics	Math 9116
Mathematical Biology	Math 6010
Applied Dynamical Systems	Math 6275
Advanced Matrix Analysis	Math 8200
Dynamical Foundation of Neuroscience	Math 8515
Informatics of Biological Systems	Math 8560
Ordinary Differential Equations and Dynamical Systems	Math 8540
Advanced Numerical Analysis	Math 8610
T Computational Neuroscience	Neur 8790

## Projects

---

### Cellular Neural Networks with Switching Connections

August 2009 to May 2012

Members: Malcom Devoe, Dr. Igor Belykh

Artificial neural networks are widely used for parallel processing of data analysis and visual information. The most prominent example of artificial neural networks is a cellular neural network (CNN), composed from two-dimensional arrays of simple first-order dynamical systems (“cells”) that are interconnected by wires. The information, to be processed by a CNN, represents the initial state of the network, and the parallel information processing is performed by converging to one of the stable spatial equilibrium states of the multi-stable CNN. This thesis studies a specific type of CNNs designed to perform the winner-take-all function of finding the largest among the  $n$  numbers, using the network dynamics. In a wider context, this amounts to automatically detecting a target spot in the given visual picture. The research, reported in this thesis, demonstrates that the addition of fast on-off switching (blinking) connections significantly improves the functionality of winner-take-all CNNs. Numerical calculations are performed to reveal the dependence of the probability, that the CNN correctly classifies the largest number, on the switching frequency.

### Digital Game-Based Learning in Advanced Applied Mathematics

August 2013 to Present

Members: Malcom Devoe, Dr. Iman Chahine

Digital Game-Based Learning is becoming a leading approach to engage students’ interests in advanced applied mathematics topics in a virtual learning environment. The purpose of this research is to examine and provide alternative approaches to learning and conceptualizing advanced topics in mathematics such as Vector Calculus, Differential Equations, and Advanced Linear Algebra using Digital Game-Based Learning environments. This study examines the effects of a computer game on students’ mathematics achievement and motivation in Multivariate Analysis, and the role of prior mathematics knowledge, computer skills, and English language skill on their achievement and motivation as they play and learn in the game world. A total of 45 students from a research university in the southeast of the United States of America are participating in this study. A mathematics professor was randomly assigned to the experimental and the control groups. This study will use a single exploratory embedded case study design that is embedded with quantitative and qualitative analyses components to analyze the data.

### Languages

---

Latin	
JAVA	(Limited working proficiency)
C++	(Limited working proficiency)
MatLab	(Professional working proficiency)
GameMaker	(Limited working proficiency)
Unity	(Limited working proficiency)

### Skills & Expertise

---

#### Teaching

Higher Education  
Statistics  
Research  
Tutoring  
Program Evaluation  
University Teaching  
Science  
SAS  
SPSS  
Curriculum Development  
Data Analysis  
Qualitative Research  
Curriculum Design  
Grant Writing  
MathLab  
Student Affairs  
Physics

#### Scholarly Research and Presentations

---

- \*Devoe, M. (2017). The Effects of Digital Game-Based Learning on Undergraduate Student Achievement and Motivation in A Calculus Course, *Interdisciplinary STEM Teaching & Learning Conference, Coastal Georgia Center, Savannah, GA*
- \*Devoe, M. (2017). The Effects of Digital Game-Based Learning on Undergraduate Student Achievement and Motivation in A Calculus Course, *Georgia Scientific Computing Symposium, Paul D. Coverdell Center for Biomedical & Health Science, Athens, GA 30602*
- \*Devoe, M. (2016). Digital Game-Based Learning in Undergraduate Mathematics, *First-Year Experience Program, Georgia State University, Atlanta, GA*
- \*Devoe, M. (2014). Educational App Modeling and Game Design, *GAMTE Conference, Rock Eagle 4-H Center, Eatonton, GA*
- \*Devoe, M. (2012). Algebra and System of Equations with Epistemography of Algebra, *Mathematics and Statistics Department, Georgia State University, Atlanta, GA*
- \*Devoe, M. (2012). Cellular Neural Networks with Switching Connections, *Mathematics and Statistics Department, Georgia State University, Atlanta, GA*
- \*Devoe, M. (2011). Pade' Approximation, *Mathematics and Statistics Department, Georgia State University, Atlanta, GA*
- \*Devoe, M. (2011). Newton's Method for Solving Nonlinear Systems, *Mathematics and Statistics Department, Georgia State University, Atlanta, GA*
- \*Devoe, M. (2011). Linear Finite Difference Method, *Mathematics and Statistics Department, Georgia State University, Atlanta, GA*
- \*Devoe, M. (2011). Glucose Transport, *Mathematics and Statistics Department, Georgia State University, Atlanta, GA*
- \*Devoe, M. (2011). Membrane Potential, *Mathematics and Statistics Department, Georgia State University, Atlanta, GA*
- \*Devoe, M. (2011). Amino Acids, *Mathematics and Statistics Department, Georgia State University, Atlanta, GA*

\*Devoe, M. (2003). Polynomial Cascading, *Leadership Alliance National Symposium, Westfields Marriott Conference Center, Chantilly, VA*

\*Devoe, M. (2003). Polynomial Cascading, *SMART Research Symposium, University of Colorado, Boulder, CO*

## Interests

---

Teaching interests include College Algebra, Geometry, Calculus, Differential Equations, Linear Algebra, and Numerical Analysis.

Research interests include complex dynamical system, learning and teaching strategies and statistical analysis to help improve student learning in mathematics on the college or university level.

## Awards and Recognitions

---

### Fellowships

- Graduate Lab Assistantship, Georgia State University, June 2008-June 2009
- Graduate Assistantship, Georgia State University, August 2009-December 2009
- Graduate Assistantship, Georgia State University, June 2010-August 2010
- Graduate Assistantship, Georgia State University, May 2011-August 2011
- Graduate Teaching Assistantship, Georgia State University, June 2009-August 2012
- Graduate Research Assistantship, Georgia State University, August 2009-June 2010
- Scholarship for Service Scholar, Morehouse College, August 2002-May 2004
- SREB Scholar, Georgia State University, August 2013-Present

### Awards

- Cum Laude Graduate Award, Spring 2004
- Most Outstanding Computer Science Student Award, Spring 2004
- National Minority Honor Society, 2001-2003
- Excellence in Mathematics Award, Spring 2002

### Committees

- Curriculum Development Committee of Mathematical Life Sciences (2011)
  - *Work with mathematics and biology colleagues to select textbooks and projects for all Calculus sequence courses for all science majors of Georgia State University*

### Publications

- Submitted in Journal of Mathematics Teachers (2017) article entitled “Round N’ Round We Go” (*submitted*)

### Certifications

- eCore Certification for E-Learning/Teaching (2014), *Online Graduate and Undergraduate Applied Mathematics Courses*



- AMSC Certification for E-Learning/Teaching (2015), *Online Graduate and Undergraduate Applied Mathematics Courses*