

GIOVANNI BELLIO

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EDUCATION

Auburn University (Aug 2024-)

Ph.D. student in Computer Science & Software Engineering

Current GPA: 4.0/4.0

Auburn University at Montgomery (Aug 2021- Dec 2022)

Master of Science (M.S) Computer Science

GPA: 3.85/4.0

Auburn University at Montgomery (Aug 2017- May 2021)

Bachelor of Science (B.S) Computer Science

GPA: 3.6/4.0

TEACHING EXPERIENCE

Lecturer of Computer Science

Auburn University at Montgomery (Jan 2023 - Present)

Courses Taught:

- Fundamentals of Computing
- Functional & Structural Programming with C++
- Object-Oriented Programming with C++
- Software Engineering
- Front-end Web Development
- 3D Object Modeling with Blender
- Game Development with Unreal Engine 5
- Embedded Systems
- Network Systems

Key Responsibilities:

- Delivered lectures and led laboratory sessions for undergraduate and graduate courses, with class sizes ranging from 10 to 120 students.
- Designed course syllabi, assignments, projects, and exams in alignment with departmental standards and objectives.
- Delivered a fully remote, semester-long course in China in collaboration with Hubei University of Economics (HBUE), through a partnership with Auburn University at Montgomery.

Instructor of Computer Science

Auburn University at Montgomery (May 2022- Dec 2022)

Courses Taught:

- Fundamentals of Computing
- Functional & Structural Programming with C++

Key Responsibilities:

- Developed course materials and programming assignments tailored for each course.
- Held office hours and assisted students from the CS department with their course content and career affairs

- Graded assignments and projects at undergraduate and graduate level courses.
- Assisted head faculty members with instruction material, lab sessions and record keeping.

RESEARCH & PUBLICATIONS

Ph.D. Dissertation (in-progress)

- Developing a serious game in Unreal Engine 5 to improve computational thinking in novice computer science students at the higher education level.
- Designing immersive in-game levels that target common conceptual challenges in programming.
- Incorporating gamification elements to maintain student engagement and motivation.

Boosting with multiple clustering memberships for hyperspectral image classification (Bellio, G., Kursun, O., and Rusell R.,)

- Developed a machine learning algorithm for hyperspectral image (HSI) pixel classification using categorical boosting enhanced with multiple clustering-based features.
- Applied ensemble methods to benchmark HSI datasets (Indian Pines, Salinas), improving classification accuracy.
- Published in IEEE SouthEastCon, April 1-2, 2023 (Paper ID: 1570863431).

Boosting with original and clustered categorical features for machine learning on large datasets (Bellio, G. et al)

- Developed a machine learning application to predict movie ratings on unseen data, with the goal of estimating their ratings prior to release.
- Applied techniques such as one-hot encoding and word embedding on IMDb datasets.
- Master's thesis research published on July 29, 2022; supported in part by the National Science Foundation (Grant No. 2003740).

SKILLS

Programming Languages:

- C++, Python, C, C#, Java, HTML, CSS, JavaScript.

Software & Tools:

- Unreal Engine 5 - Videogame development with Blueprints and C++
- Unity - Videogame development with C#
- Blender - 3D object modeling
- Wireshark - Network traffic analysis
- Visual Studio - C++ application development
- Visual Studio Code – Front-end web development
- Tinkercad –Arduino circuit and code simulation.
- Figma – UI/UX and interface prototyping
- Lucidchart – UML and flowchart design for software engineering

EXTRACURRICULAR

- Served as a Judge in multiple K-12 Science Fairs in the State of Alabama.
- Led on-campus summer camps for pre-college students focused on teaching programming fundamentals.
- Earned the NVIDIA Fundamentals of Deep Learning certificate.
- Native Spanish Speaker.
- Played tennis at a professional level - Ranked #12 nationally with AUM tennis team.