CLARK UNIVERSITY

CHALLENGE CONVENTION.
CHANGE OUR WORLD.

Brian Hogan, MS <email><in><github><this.pdf>
Instuctor of Computer Science
School of Professional Studies
Clark University
950 Main Street, Worcester, MA, 01610, 508-793-7218

I equip students with immediate, tangible skills and preparedness to exceed employer expectations on day 1.

Currently, I instruct foundational compute from machine and assembly with LC-3 via patt/patel to C++. My expertise spans theoretical system design, practical re-engineering, data transformation, essential programming, and STEM communication. I'm grateful for my quality master's in data science that upskilled my ability to author graduate courses like COSC-526 data mining with Spark.

An active learning pedagogy complements my instruction by leveraging Colab, Google Sheets, and Github. Drawing inspiration from bee festooning, students collaborate in weekly JAMs, linking root concepts for effective task decomposition like being handed a book and having an hour to create tables of all chapters and words for text and machine learning.

An embodiment of a Lacanian real, a Krokeresque new.REAL is central to my teaching paradigm. Education is a performative act, lived and crafted, not passively consumed. This paradigm challenges passive learning and draws on Arthur Kroker's concept of *body drift*, i.e., a blend of humanity with technology and Foucault's active knowledge structures. Students don't absorb but actively shape, create, and immerse themselves. Education isn't a symbolic un.REAL but a tangible, actionable commodity echoing Baudrillard's simulacra. The new.REAL demands deeper requiring use of abstraction and ontological formation skilling.

Augment student learning and engagement is furthered using generative pretrained transformers that

I. Convert lecture audio to text and integrate into class corpus.
II. Use GPT tech to synthesize disparities, including lecture notes and textbooks.
III. Email disparity index and aggregate media into a central repository.
IV. Feed repository into a course specific AI agent, further supporting student tasks.
V. Facilitate upskilling and recall mnemonics while experiencing a new.REAL of our social fabric.

code
university.instructor

portfolio.home
industrial.reengineering

recommendations
research.experience

science.edit.+.tech.write
tutor.an.volunteer

google.learning.lab.Get.Started.w.Python

festooning bees mending

- cv <.pdf>
- evaluations <.pdf>
- diversity.statement <.pdf>
- research.interests <.pdf>
- scholarly.activities <.pdf>
- teaching.statement <.pdf>
- 7.pillars.of.skills <.pdf>

stabilimentum
zigzag
/\/\/\/\/\
decoration,
or warning?

lecture.thematic

Melitologic and arachnids, mainly honeybee and orb-weaver spiders, inspire my adaptive learning approaches and serve as an ongoing lecture thematic to help bridge students to higher principal thinking by understanding creature visual, cooperation, and structural adaptations such as

- A worker bee signals a sentry to clean a mite instead of infecting the hive indicating health consciousness, unity, and collective intelligence.
- Spiders weave adaptive stabilimentum patterns to decoy from a predator's perception and even cloak their abdomen or cephalothorax in plain sight.

Arachnids => Antipredator strategies and visual asecthics

Robledo-Ospina, Luis, et al. Visual Antipredator Effects of Web Flexing in an Orb Web Spider, with Special Reference to Web Decorations. *Die Naturwissenschaften* 110.3 (2023): 23. *ProQuest*. Web. 18 Aug. 2023.

Abstract Some visual antipredator strategies involve the rapid movement of highly contrasting body patterns to frighten or confuse the predator. Bright body colouration, however, can also be detected by potential predators and used as a cue. Among spiders, Argiope spp. are usually brightly coloured but they are not a common item in the diet of araneophagic wasps. When disturbed, Argiope executes a web-fexing behaviour in which they move rapidly and may be perceived as if they move backwards and towards an observer in front of the web. We studied the mechanisms underlying web-fexing behaviour as a defensive strategy. Using multispectral images and high-speed videos with deep-learning-based tracking techniques, we evaluated body colouration, body pattern, and spider kinematics from the perspective of a potential wasp predator. We show that the spider's abdomen is conspicuous, with a disruptive colouration pattern. We found that the body outline of spiders with web decorations was harder to detect when compared to spiders without decorations. The abdomen was also the body part that moved fastest, and its motion was composed mainly of translational (vertical) vectors in the potential predator's optical fow. In addition, with high contrast colouration, the spider's movement might be perceived as a sudden change in body size (looming effect) as perceived by the predator. These effects alongside the other visual cues may confuse potential wasp predators by breaking the spider body outline and afecting the wasp's fight manoeuvre, thereby deterring the wasp from executing the fnal attack. Keywords Deimatic displays·
High-contrast visual cues· Secondary defensive strategies.

Stabilmentum

A **stabilimentum** (plural: **stabilimenta**), also known as a **web decoration**, is a conspicuous silk structure included in the webs of some species of orb-web spider. Its function is a subject of debate.

Baltimoreandohiorr(2019), https://www.youtube.com/watch?v=kNzg0PCVMqk

https://en.wikipedia.org/wiki/Stabilimentum

1. Festooning bees from Wildflower Meadows. Retrieved from: www.wildflowermeadows.com

GPT.generated.schematic

- Responds to use of ASCII diagrams for information exchange.
-

```
Evolving Relationship Between the Teacher's Pedagogical Paradigm
& Active Engagement of Students in the Realm of the new.REAL
                                ▼
          TEACHER    <————————|————————>    STUDENT
              |                 |
  Instructional Depth           |
              ▼                 |
       Foundational Computing
              ├─ Machine/Assembly LC-3
              ├─ C++
              ├─ System Design
              ├─ Re-Engineering
              └─ STEM Communication
                                |
   Pedagogical Methods          |
              ▼                 |
       Active Learning Tools    |
              ├─ Colab     ————————————————————> Collaborative Experimentation
              ├─ G Sheets  ————————————————————> Real-time Analytics & Comprehension
              └─ Github    ————————————————————> Technical Literacy & Code Management
                                |
  Teaching Paradigm             |
              ▼                 |
         Kroker's new.REAL      |
              ├─ Lacanian Real ——————————————> Challenging Perception of Reality
              ├─ Foucault's Active Knowledge —> Active Participation
              └─ Baudrillard's Simulacrum ———> Tangible Education Beyond Symbolism
                                |
  Technological Integration     |
              ▼                 |
        GPT API Utility         |
              ├─ Audio-Text Synthesis ——————————> Multi-modal Learning
              ├─ Disparity Analysis ————————————> Critical Evaluation
              └─ AI-agent Assistance ———————————> Advanced Queries & Deep Dives
                                |
  Learning Outcomes             |
              ▼                 |
        Preparedness for new.REAL ————————————————> Tactical Skill Acquisition
              ├─ Abstraction & Mechanics Analysis —> Depth of Understanding
              └─ Immediate Skill Demonstration ———> Real-world Application
```