Lifelong Learning Lab

Smarter Assignments, Better Feedback, More Learning

Brandon Garzez
About Me

From Pittsburgh, PA
B.S.E. Computer Science, December 2021
Minor in Entrepreneurship
HKN-BE Member, IEEE Honor Society

And a big fan of Michigan Football!
And yes...

... I mean a BIG fan!

November 27, 2021
About the Lifelong Learning Lab

- Research Human-Computer Interaction, Learning Sciences, and Artificial Intelligence
- Goal: help people gain knowledge and acquire skills more easily and efficiently
- Develop techniques that support and optimize human learning
- Learn about how humans learn

People

- Xu Wang: Assistant Professor
- Xinyue Chen: Ph.D. Student
- Zhaoyuan Zhang: Masters Student
- Brandon Garzez: Undergraduate Student
- Isaac Moothart: Undergraduate Student
- Jessie Houghton: Undergraduate Student
- Matthew Tomaszewski: Undergraduate Student

Alumni

- Xiaofei Zhou: Visiting Ph.D. Student
- Daniel De Angulo: Visiting Masters Student
- Erin Deutschman: Masters Student
- Nithin Weerasinghe: Undergraduate Student
- Lyubing Qiang: Undergraduate Student
- Shipeng Liu: Visiting Undergraduate Student
Meet my Faculty Advisor

Prof. Xu Wang
Assistant Professor in CSE

Master of Education in Technology, Innovation and Education

Ph.D. in Human-Computer Interaction

Assistant Professor
How I got involved with the Lifelong Learning Lab

January 2021
- Began taking EECS 445: Machine Learning

April 2021
- Reached out to Prof. Jenna Wiens about research

August 2021
- Interviewed with Prof. Xu Wang for Lifelong Learning Lab
upGrade: Sourcing Student Open-Ended Solutions to Create Scalable Learning Opportunities

1. Student written open-ended solutions are logged
2. Solutions are segmented into sections (based on rubric items and templates)
3. Sections are mix-matched to generate questions with instructor-specified schemata

Read more: https://web.eecs.umich.edu/~xwanghci/papers/upgrade_l@s2019.pdf
Development Goals

Separate modules which run as individual Django applications

Single Django application which contains all modules & enables navigation between modules
Development Goals

Easily add additional modules to the application

Requires templated modules, backend code, and HTML
Project Timeline

- **Setup & get familiar with codebase**
  - Sep

- **Get one module to work with "generalized" code**
  - Oct

- **Merge a second module**
  - Nov

- **User Test**
  - Nov

- **Third Module**
  - Dec

- **Design Expo**
Results

Storyboard → Logdata → UAR → UpGrade
New modules can be added to database with no additional effort.
Reflection: The Good

- Built a functional application
- Learned Django framework
- Learned JQuery
- Solidified my love for web development
Reflection: The Not So Good

Rushed to complete user test, fix bugs, and build report

Dove in without fully understanding project

Had to refactor code many times due to "greedy" approach
The Next Steps

Improve look & feel with CSS

Completely generalize database with no special cases for certain modules
Thank you!

Questions? Let's get in touch!

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