



**Purdue Chapter
Association for Computing Machinery**

*Jordan Field
President*

What is ACM?



- A collection of groups focused on fields in computing
 - Game Development
 - Artificial Intelligence
 - Robotics
 - Applications Development
- Host Special Events
 - Company Tech Talks
 - Help Sessions
 - Programming Competitions
 - Hackathons



High School Coding Competition



- Simple coding questions (think FizzBuzz)
- Talk to students about CS and Purdue
- Learn about competitive programming
- 100% of students who signed up came!



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Looking Forward



- Student Led Tech Talks
- Collaboration with other CS Organizations
- College-level competitions
- High School Coding Competition





PURDUE SIGBOTS

Special Interest Group for Robotics



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Success Last Year

- Both Purdue teams in finals of Qualifier event
- World Championship appearance
- 2 Tournament Champion Awards, 2 Design Awards, and 2 Robot Skills Award at Qualifiers
- Largest Qualifier event yet with 11 teams



PROS: only student developed OS in VEX

- Open source RTOS for VEX Cortex Microcontroller
- Offers C and C++ development through PROS CLI and Atom IDE plugin
- 800 users since introduction of tracking through Atom
- Partnering with VEX for development of upcoming V5 microcontroller



PROS

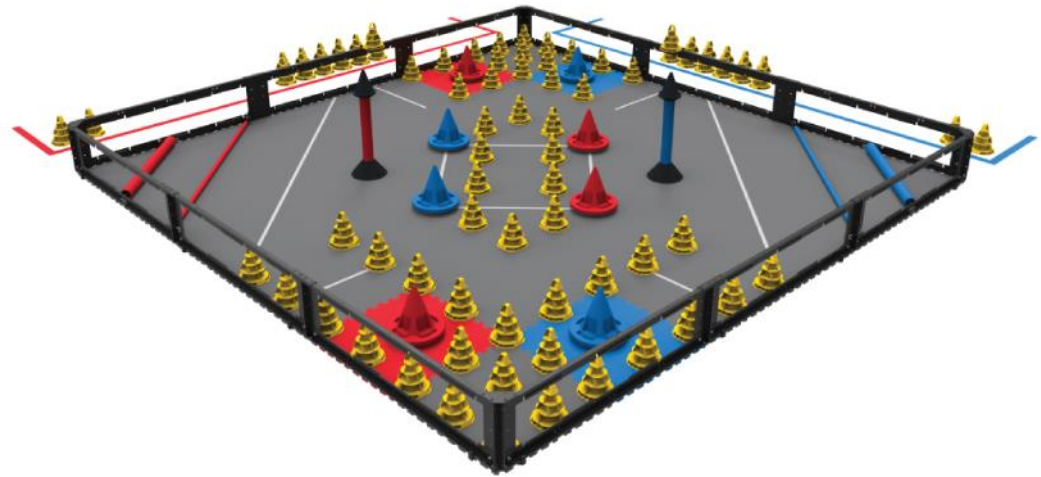


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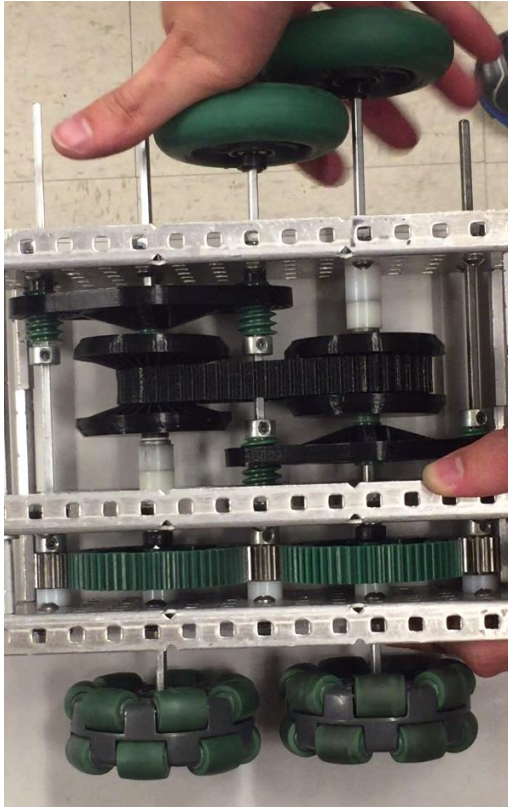
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This Year's Game

- Stacking cones on mobile and stationary goals
- Moving mobile goals into zones
- Bonuses for highest stacks



Projects for the Upcoming Season



- Continuous Variable Transmission (left)
- Further development of magnetic current detection sensor
- Image processing with PIXY CMUcam
- Two robots for two teams in VEX competition
- Revamp of JINX, a graphical debugging tool for PROS



“How can I help out?”

Love to champion sponsors on our robots, t-shirts, and at competitions

Resources used for:

VEX parts

Competition Registration Fees

Field equipment

Advanced lab equipment

Oscilloscope/Logic Analyzer

3D printer





siggd

ACM Special Interest Group on Game Development

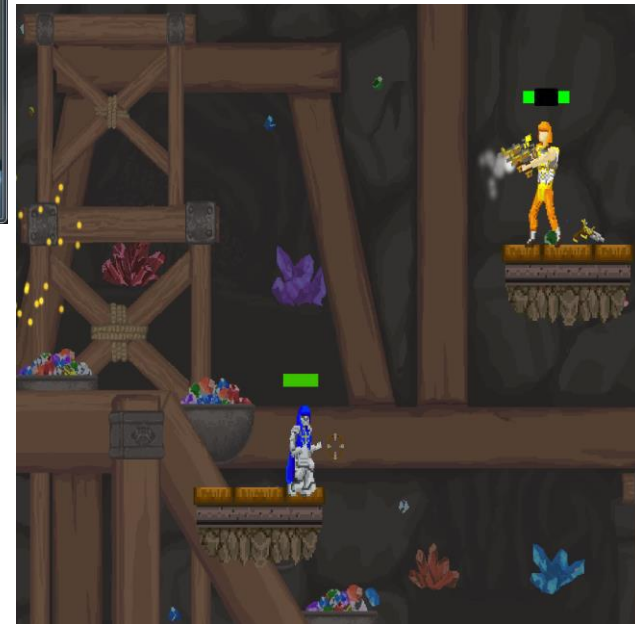
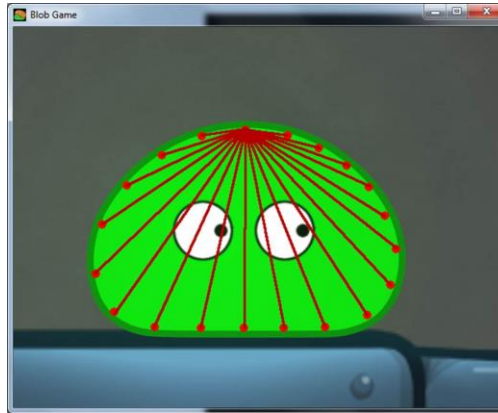


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Who are we?

- Developers
- Artists
- Designers



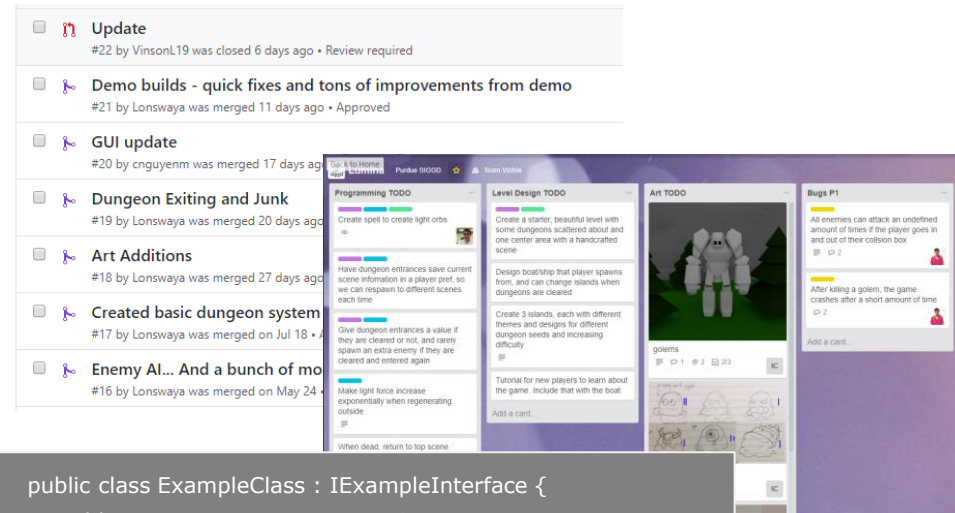
What do we do?

- Semester-long project
- Hosted events and opportunities
 - SIGGD Game Jam (Hackathon)
 - Global Game Jam
- Workshops and training



What do we teach?

- Coding standards
- Familiarity with Git, Github
- Teams and tasks for each individual (Trello)
- Introduction and setting expectations about the Game Development industry



The screenshot displays a GitHub repository interface. The commit history on the left includes:

- Update #22 by VinsonL19 was closed 6 days ago • Review required
- Demo builds - quick fixes and tons of improvements from demo #21 by Lonswaya was merged 11 days ago • Approved
- GUI update #20 by cnguyenm was merged 17 days ago
- Dungeon Exiting and Junk #19 by Lonswaya was merged 20 days ago
- Art Additions #18 by Lonswaya was merged 27 days ago
- Created basic dungeon system #17 by Lonswaya was merged on Jul 18 • Approved
- Enemy AI... And a bunch of mo #16 by Lonswaya was merged on May 24 • Approved

Overlaid on the right is a Trello board with four columns:

- Programming TODO:**
 - Create spell to create light orbs
 - Have dungeon entrances save current scene information in a player pref, so we can respawn to different scenes each time
 - Give dungeon entrances a value if they are cleared or not, and rarely spawn an extra enemy if they are cleared and entered again
 - Make light force increase exponentially when regenerating outside
 - When dead, return to top scene
- Level Design TODO:**
 - Create a starter, beautiful level with some dungeons scattered about and one center area with a handcrafted scene
 - Design bossship that player spawns from, and can change islands when dungeons are cleared
 - Create 3 islands, each with different themes and designs for different dungeon seeds and increasing difficulty
 - Tutorial for new players to learn about the game. Include that with the boat
- Art TODO:** (Contains a 3D model of a golem)
- Bugs P1:**
 - All enemies can attack an undefined amount of times if the player goes in and out of their collision box
 - After killing a golem, the game crashes after a short amount of time

```
public class ExampleClass : IExampleInterface {  
    public const int EXAMPLE_INTEGER = 1;  
    private String exampleString;  
    public void Start() {  
        this.GetComponent<ExampleComponent>().doThings();  
    }  
}
```



What's next?

- VR Applications
- Mobile app development
- Split teams, with different skill levels
- Involving Game Development groups across campus



SIGAI

Artificial Intelligence



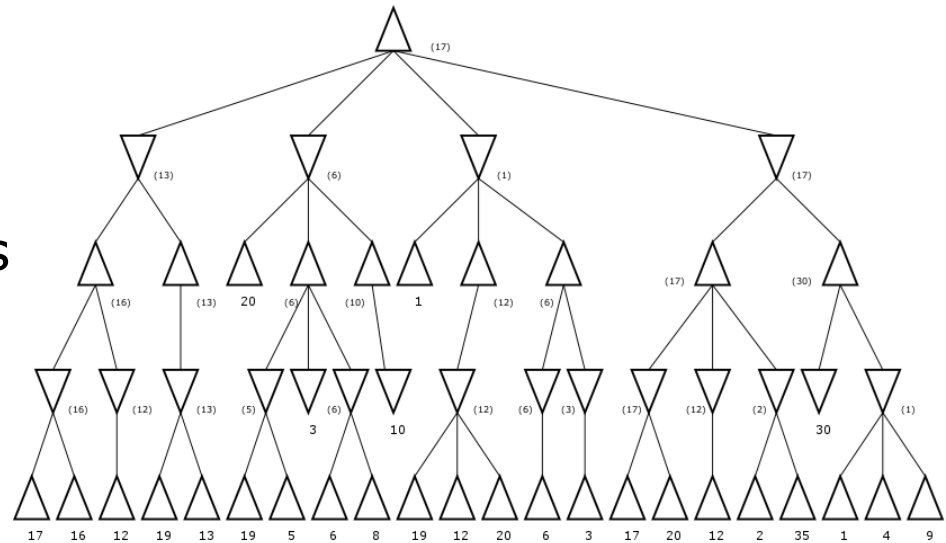
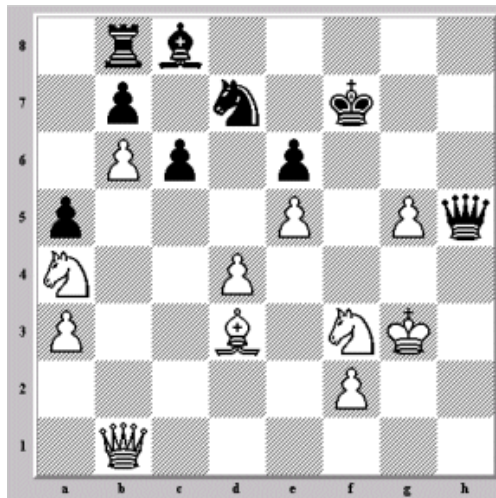
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Last Year (Fall & Spring): Chess A.I.



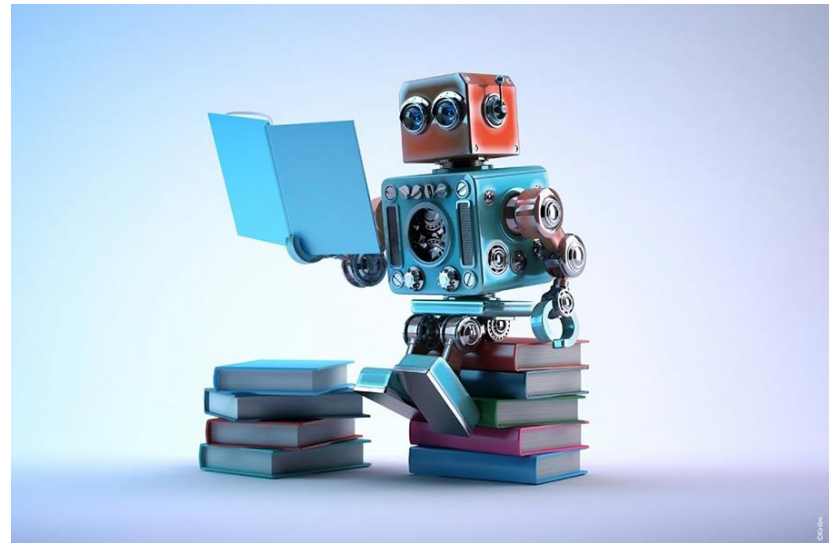
- MiniMax
- Alpha Beta Pruning
- Transposition Tables
- Evaluation Improvements
- Genetic Algorithm



This Year (Fall): Project TBA



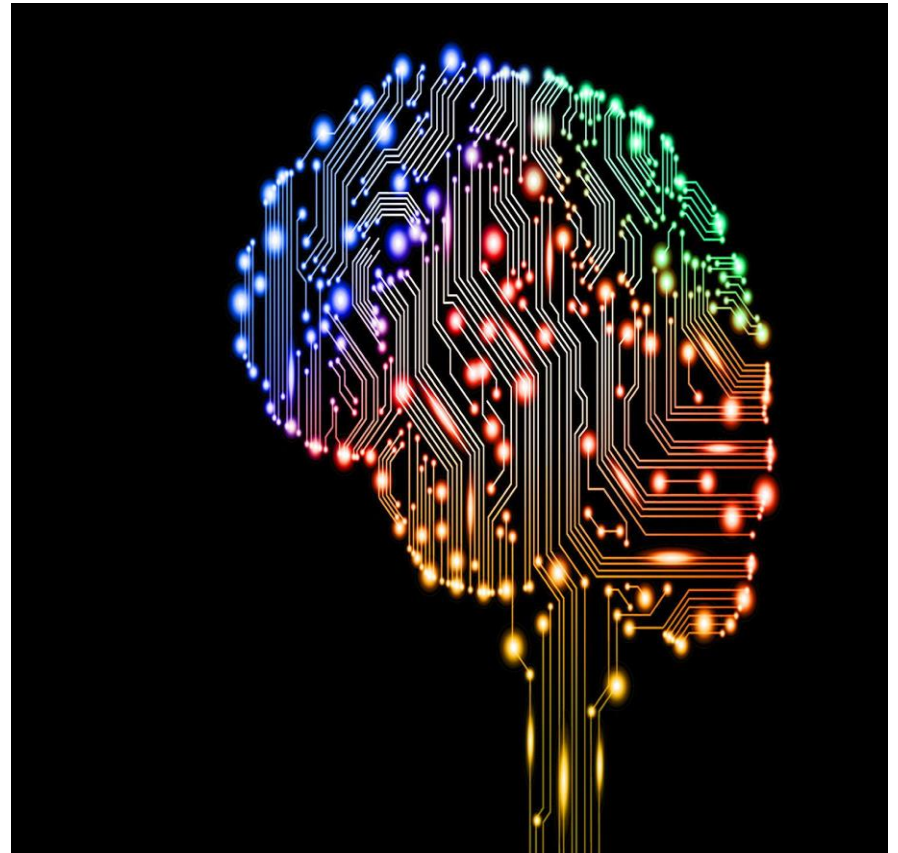
- No set in stone project - club will decide
- Many ideas to consider:
 - Theaigames.com - site for competition against other bots
 - Handwriting simulation
 - Machine learning
 - facial recognition
 - object understanding



New Things We are Thinking About



- Informational sessions
- A.I. bot competitions
- Discuss cutting edge research in the artificial intelligence field





SIGAPP

Applied Computing



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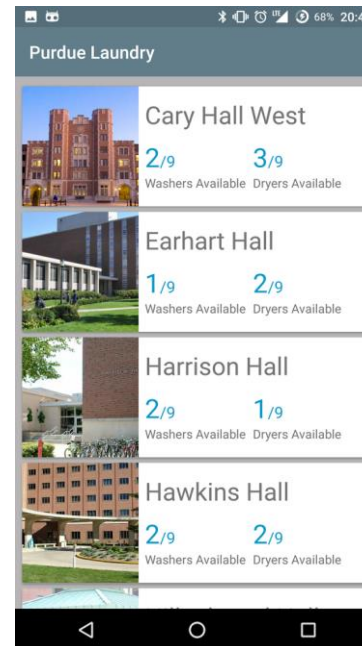
Jeff Hughes
SIGAPP President



Purdue Laundry

- Launched to the Play Store
- Has almost a thousand users
- Has a server and Android component

tinyurl.com/PurdueLaundryApp



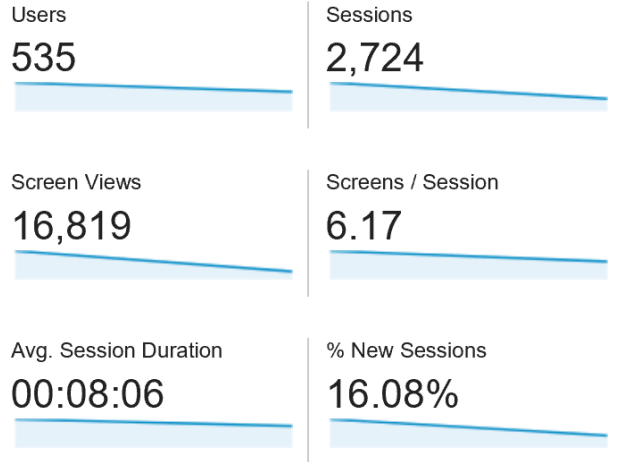
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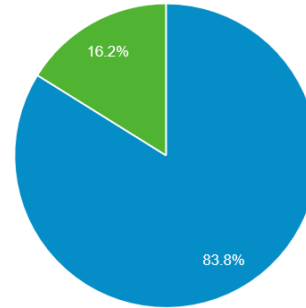
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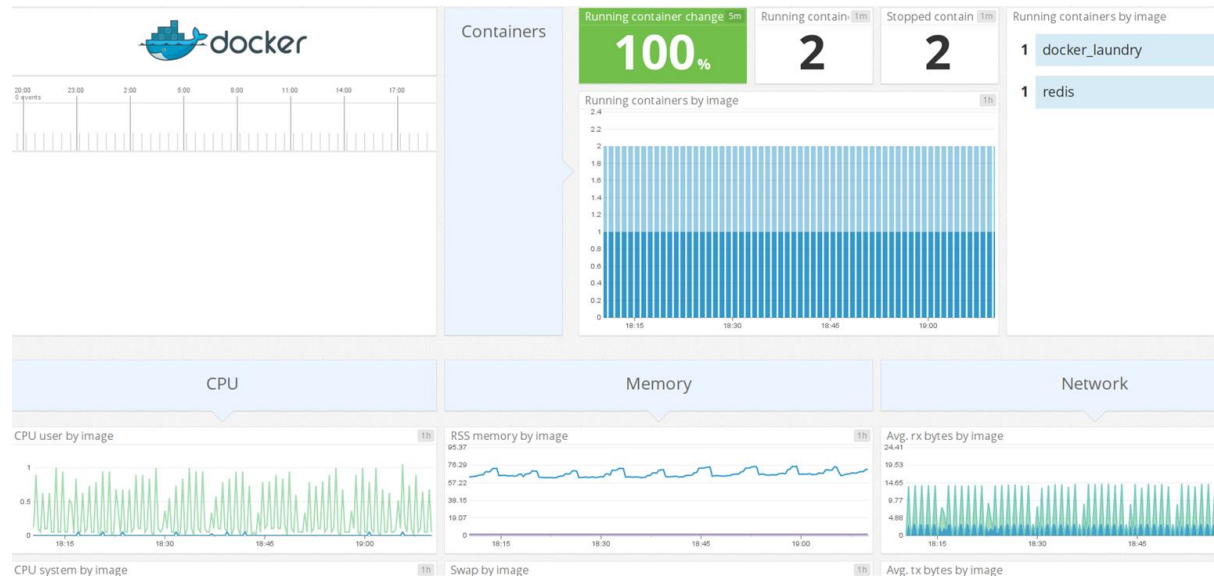
Monitoring and Analytics



■ Returning Users ■ New Users



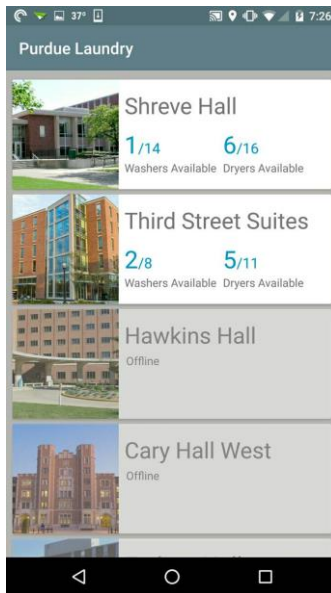
- Loggy
- DataDog
- Google Analytics





Future plans

- **Adding an iOS app**
- Analyzing machine usage to suggest times to do laundry
- Responding to user feedback
- Continuous performance increases and server updates



Our Goals

We give students experience with real world systems by creating real world applications using powerful technologies.

We want to show members what it is like to build a full stack application and experience maintaining one.

This year, we plan to follow an actual college-like course for our Android tutorials.

We are also planning to start a brand new project this semester.

