APPALACHIAN STATE UNIVERSITY

COLLEGE OF ARTS AND SCIENCES

Computer Science

Beyond the Bachelor’s

Dr. Mitch Parry

Today’s presentation

- Why a Master’s degree in Computer Science?
- Requirements for the Master’s degree
- Accelerated admission
  - You can complete the Master’s degree in only one extra year!
- Project vs. Thesis

Why a Master's Degree in Computer Science?

- Money
  - In 2021, Bureau of Labor and Statistics reported the median salary for Computer and Information Technology occupations to be $136,600 for those with a Master's degree in Computer Science
    - This is $30,000 higher than the median salary for those with only a Bachelor's in CS
- Opportunity
  - You'll be more marketable and that Master's Degree might help you get that dream job
  - 95% of our graduates are employed in the discipline within 6 months of graduation
- Experience
  - You'll be better prepared for the workforce, and
  - Have better opportunity for advancement
- Funding
  - Almost all of our graduate students are funded
  - Assistantships cover in-state tuition plus $5000 living expenses

Requirements for the Master’s degree

- Three Core Area Courses
  - Design and Analysis of Algorithms
  - Operating Systems
  - Software Engineering
- Nine hours in an approved concentration
  - Data Science and Visual Computing
  - Systems
  - Theoretics
  - Web & Mobile
- Thesis (9 hours) or Project (3 hours)
- Total of 36 hours of approved course work

- Time to degree: about 1.75 years

Accelerated Master's Program

- Up to twelve hours of graduate courses taken during senior year count toward undergraduate and graduate degrees
  - 36 - 12 = 24 hours remain to complete graduate degree
    - typically two semesters and a summer
- Application requirements are easier
  - GRE not required
- GPA must be a minimum 3.2 when in the undergraduate degree for the graduate courses to dual count

- Time to degree: about 1 year

Decelerated Master's Program (those without CS degree)

- Tailored program of study depending on prior experience

- Programming proficiency: 11 hours in two semesters (or previous degree)
- About 15 hours of undergraduate CS prerequisites
- 36 hours graduate coursework (standard program)

- Time to degree: about 2.5-3.0 years depending on programming experience
- Students are eligible for assistantships once they succeed in undergraduate coursework

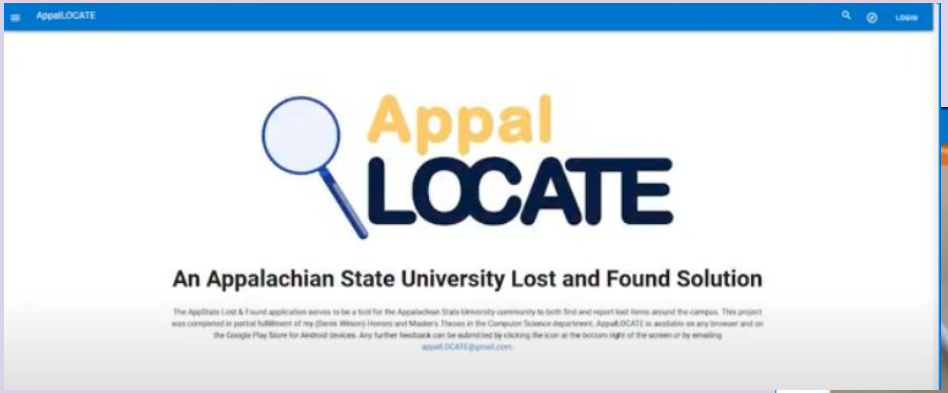
Project versus Thesis

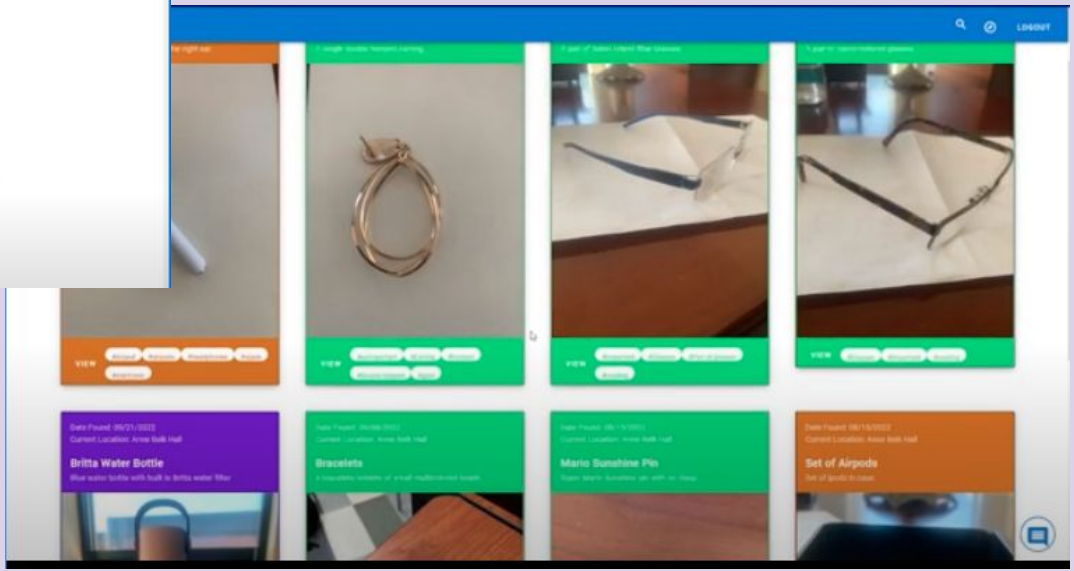
- Student chooses the project or thesis topic
  - Faculty will often help guide this process
- Typically both the project and the thesis will require the design and implementation of software
  - However, sometimes the thesis topic requires the use of others' software for experimentation and study
- Thesis requires research and writing
  - What is the related work?
  - What questions is the research trying to answer?
  - How does the research answer these questions?
- Thesis often leads to a publication

If your ultimate goal is a PhD in any area, the thesis will provide valuable insight into that process.

Recent Master's Thesis

Derrick Wilson (May 2023) - Appal LOCATE: A Lost and Found Solution



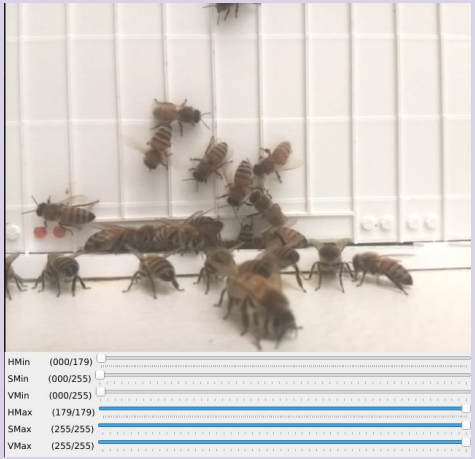


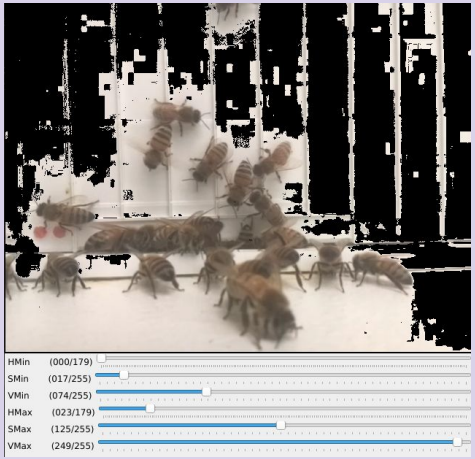
Recent Master's Thesis

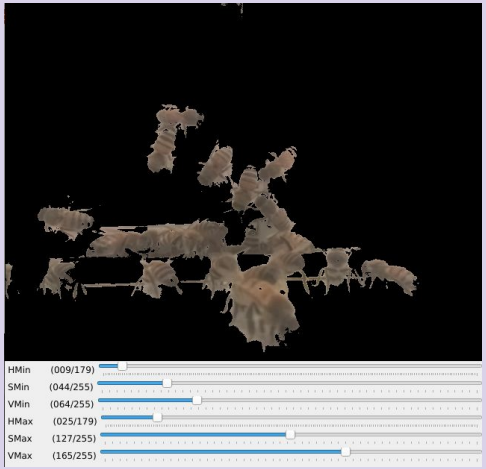
Willow Sapphire (May 2022) - The Design and Implementation of a Teaching Wiki

Recent Master’s Project

Curt Bridgers (August 2023) -Towards Accurate Bee Arrival and Departure Counts Using Mixture of Gaussian Based Background Subtraction

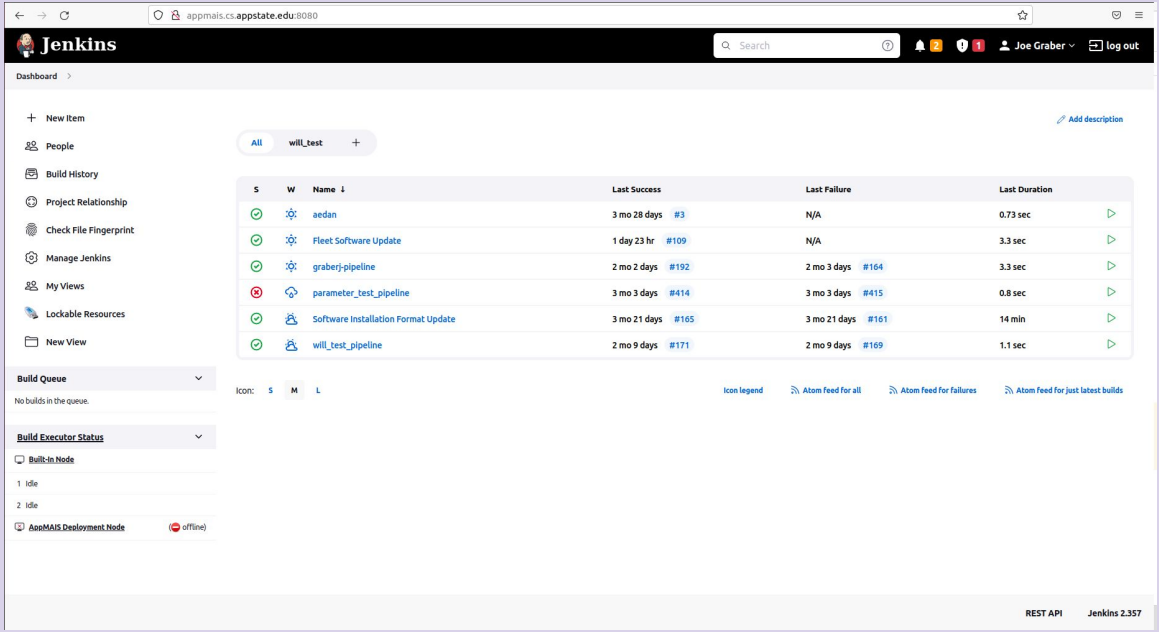






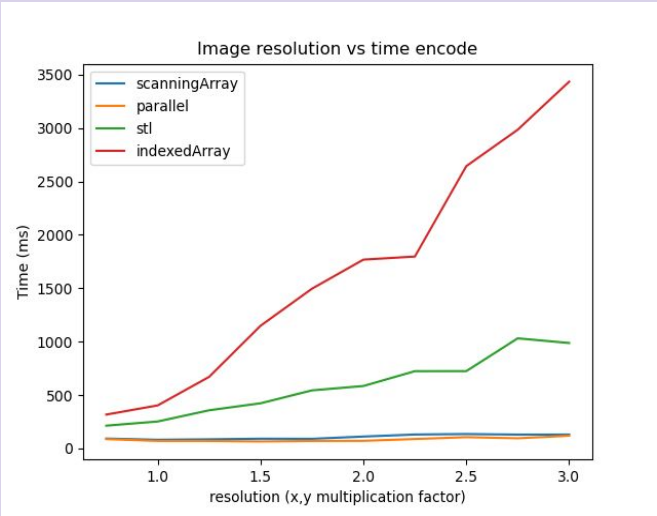
Recent Master's Project

Joe Graber (August 2022) - Jenkins for AppMAIS (Honey Bee Monitoring System)



Recent Master’s Project

Andrew Pobrica (May 2023) - Parallelization of inserting and extracting messages hidden in images



Department Fast Facts

- Academic Programs
  - Bachelor’s of Science, ABET accredited, 600 students, 110 graduates/yr
  - Master’s of Science, 25 students, 10 graduates/yr
  - Data Science Certificate, 30 students
- Engaged Faculty
  - 19 funded grants, > $5 million over last 7 years
  - 20 faculty members
- Program began in mid 1970s, became department in 1998

Questions?

- Also don’t forget to visit these rooms:
  - **Undergraduate Program in room 310**
    - Learn why you should get your Bachelor’s degree in CS here at App State
  - **Reaching Higher in room 325**
    - Earn an extra, highly marketable, credential in Data Science
    - Take graduate courses that can count toward the Master’s degree and graduating with honors
  - **Student Success in room 327**
    - Extra curricular activities help our students succeed!
    - Get the student perspective of our program!
  - **Student Research Lab in room 312-W**
    - See what research some of our students are working on!