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# Fireflies



# Firefighting for tomorrow

David Hammond

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# Who am I

- My name is David Hammond
    - Senior at SLA
    - CTE engineering student
  - I'm going to study Nuclear Engineering at Penn State
    - Plan on getting my MBA
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# **My Essential Question**

How can technology be used to better serve first responding firefighters and save lives in high priority situations?

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# Importance of Drones

- Used for many critical jobs
    - I.e. search and rescue, disaster relief, and construction
  - Have intel gathering abilities that are unmatched for their size and speed
  - Many firefighting protocols and techniques are outdated
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# Division of Tasks

ME	EE	CODE
Connection of Thermal Camera and drone body	Powering of Thermal Camera  Transmitting data to a main CPU	Creating a hub for both cameras  Borrowing the drones incoming and outgoing data  Sending thermal imaging to external application

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# Mechanical Engineering



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# Electrical Engineering

- Power source for thermal camera
    - External battery attached to drone
    - Using power from the drones battery
  - Transmitting data
    - Thermal camera to CPU and CPU to external application
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# Coding

- Creating one main hub
    - Directing the flow of data from each input to different outputs
  - Feeding the data from the drone to the CPU
    - Changing the destination from the controller to the CPU
  - Tricking the thermal camera
    - Using bluetooth transmitters to display the thermal imaging
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# Importance

- An average of 358,500 residential fires occur each year in the US
  - There are 12,300 injuries due to home fires per year
  - There are 2,510 deaths due to home fires per year
  - These numbers are not going down
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