# Fetch Data Transfer Protocol


THE UNIVERSITY of MISSISSIPPI

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# Sources

- Presentation available at `http://bit.ly/wsn-final`.
- Based on ideas in Werner-Allen, Geoffrey, Konrad Lorincz, Mario Ruiz, Omar Marcillo, Jeff Johnson, Jonathan Lees, and Matt Welsh. 2006. Deploying a Wireless Sensor Network on an Active Volcano. Internet Computing, IEEE 10 (2). IEEE: 1825.
  - Full text is viewable at `http://www.cs.harvard.edu/~mdw/papers/volcano-ieeeic06.pdf`
- Proposal can be found at `http://claymcleod.github.io/papers/engr691-final-project/paper.pdf`

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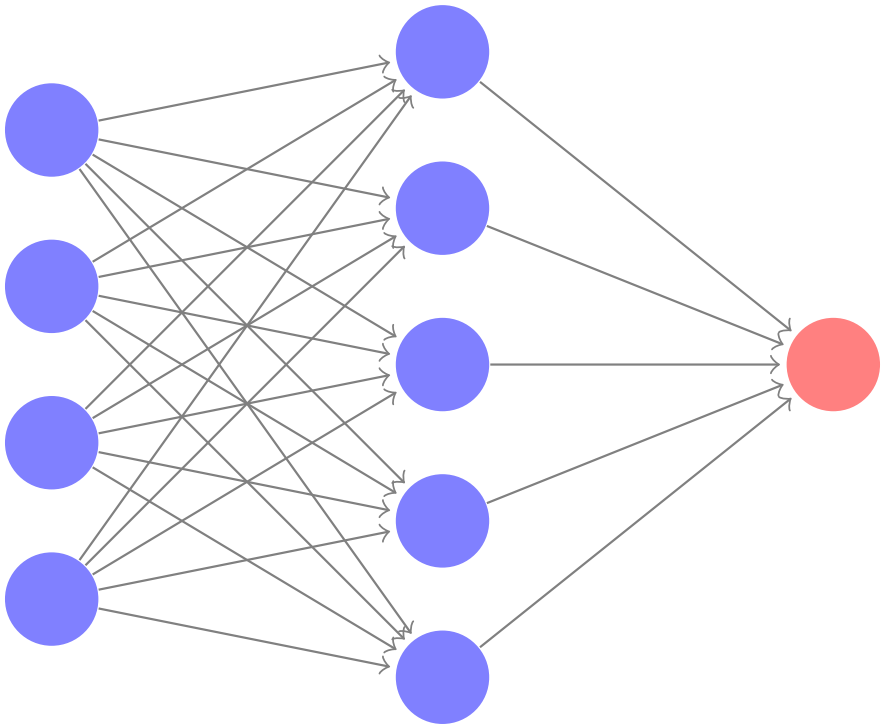
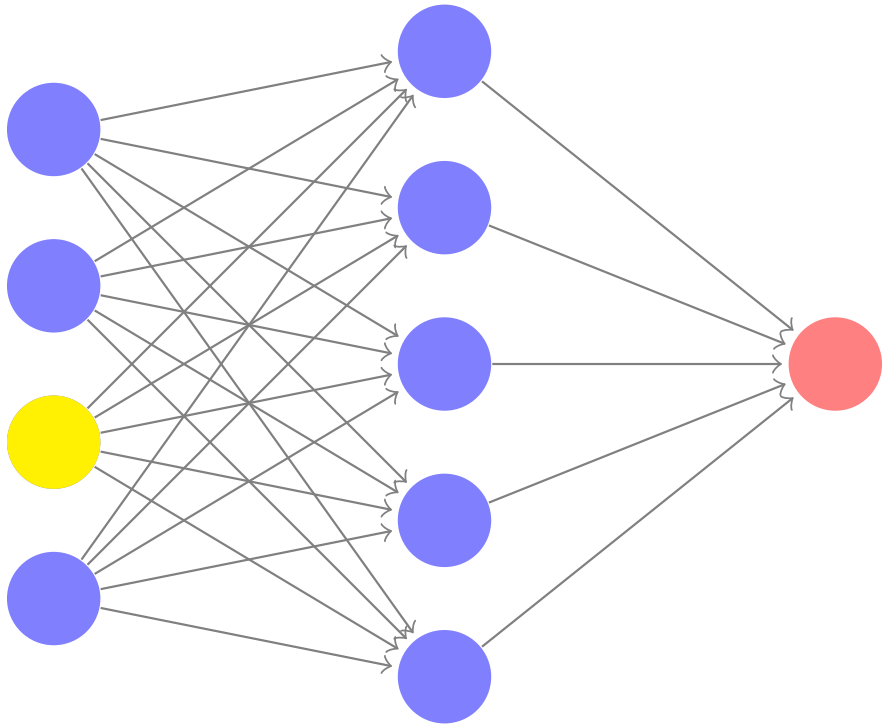
  3. In turn, the node will send the missing chunks until the laptop indicates it has received all sequences.
  4. Because the network is sparse, the laptop uses **flooding** to request data from the network.

# Visualization



# Visualization

A node indicates that an activity has occurred based on some input threshold.



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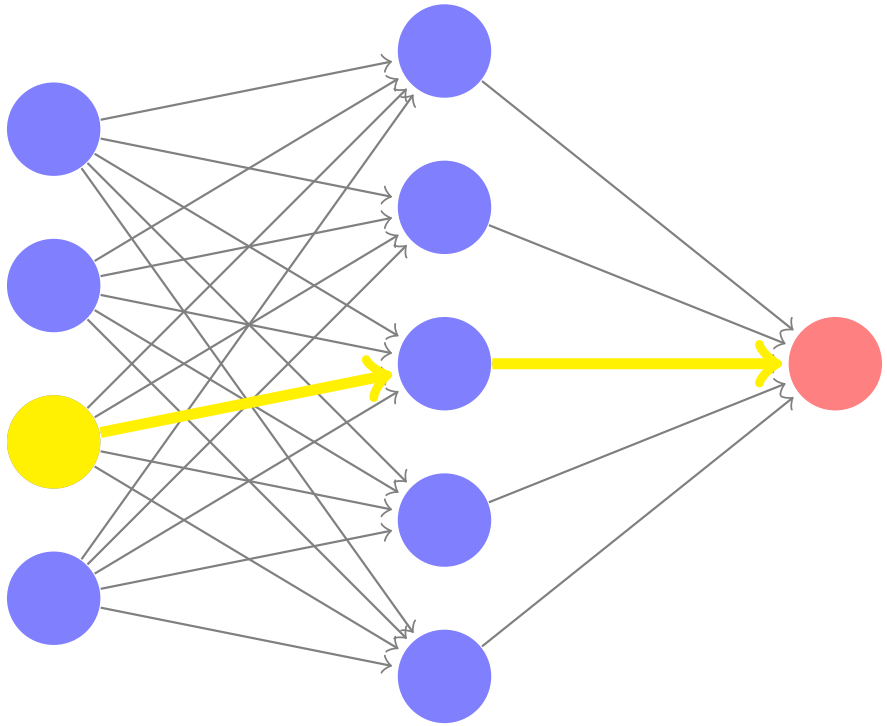
That node communicates back to the base station, letting it know that an event has been perceived



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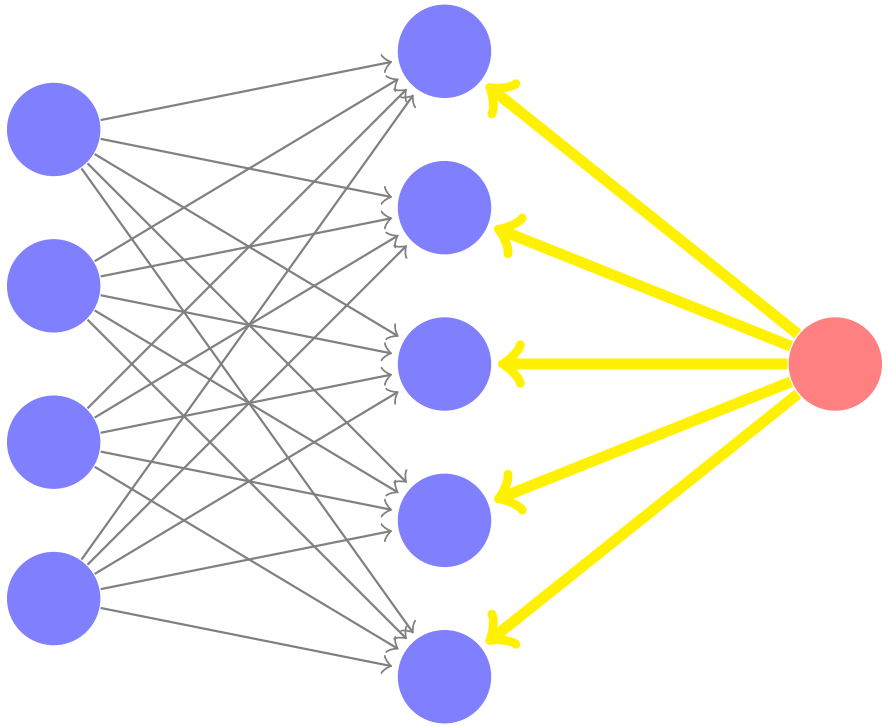
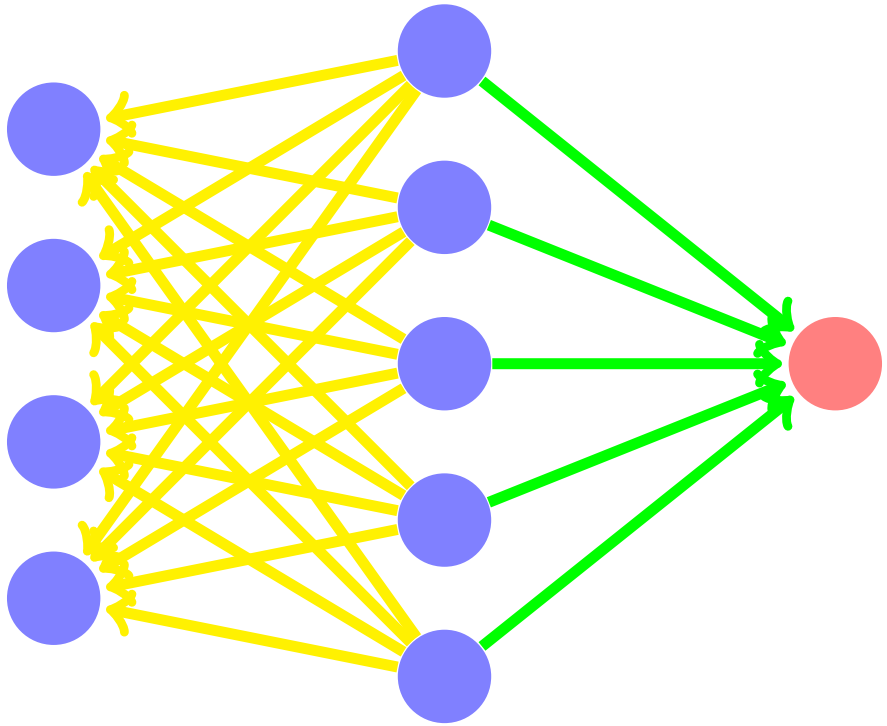
When the base station receives enough signal, a data collection is initiated



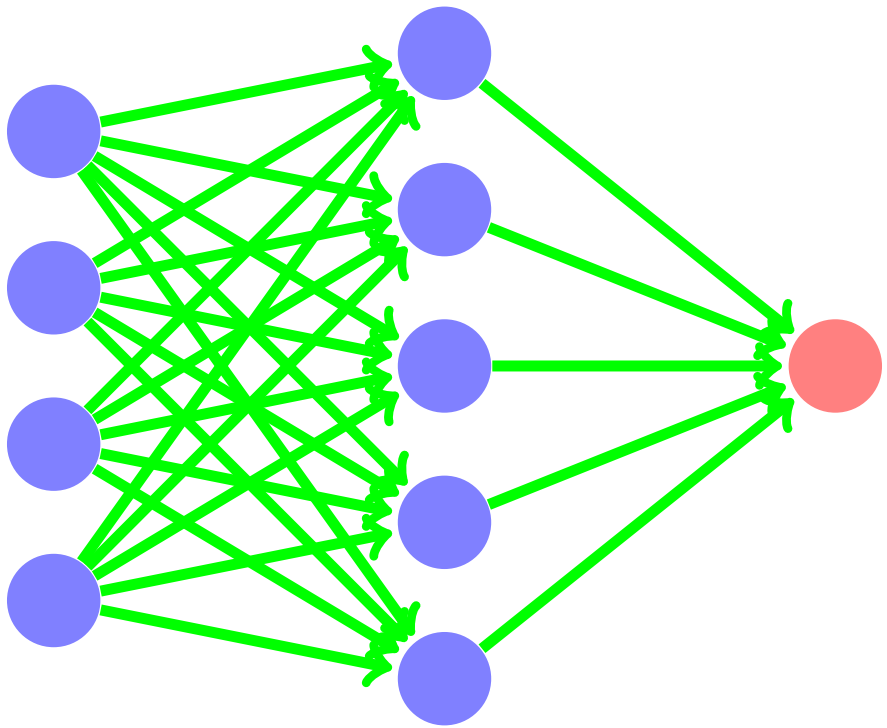
# Visualization

Nodes closest to the base station attempt to transfer their data to the base station while the request propigates through the WSN



# Visualization

Eventually, all nodes are communicating with the base station



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- Using a light sensor attached to the circuit board, we can simluate our own event by setting a threshold by how much light is present to trigger an event.
- Data about the amount of light present will be constantly recorded and trasmitted to the base station once an event has occurred using the protocol described earlier.

# Comparison with Paper

| Description | Paper | Project | Comparable |
|---|---|---|---|
| Data Type | Seismic Activity | Light Presence | X |
| Data Frequency | Continuous | Continuous | ✓ |
| Node Distance | 200-400m | $< 10$m | X |
| Network | Lossy | Consistent | X |
| Hardware | IEEE 802.15.4 | IEEE 802.15.4 | ✓ |
| Software | TinyOS | TinyOS | ✓ |

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- Potentially define interface for storing data

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*In Progress (TBD)*

# Questions?