The Heron

The Heron is a small unmanned surface vehicle (USV) made by Clearpath Robotics in Waterloo Canada. MIT has six Herons with plans for addition vehicles in the Spring of 2021. They are the primary teaching platform for MIT 2.680 taught each Spring Term since 2012.

<table>
<thead>
<tr>
<th>Size</th>
<th>53.2 x 38.6 x 12.6 in</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>28 kg (62 lbs)</td>
</tr>
<tr>
<td>Sensors</td>
<td>GPS, IMU</td>
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<tr>
<td>Top Speed</td>
<td>1.9 meters / sec</td>
</tr>
<tr>
<td>Battery Life</td>
<td>1-2 hours depending on mission/speed</td>
</tr>
<tr>
<td>Software</td>
<td>Front Seat (ROS/Clearpath), Back Seat RasPi MOOS-IvP</td>
</tr>
<tr>
<td>Further Info</td>
<td><a href="https://oceanai.mit.edu/herons">https://oceanai.mit.edu/herons</a></td>
</tr>
<tr>
<td>Heron USV Photos</td>
<td><a href="https://oceanai.mit.edu/media/HeronUSV/album">https://oceanai.mit.edu/media/HeronUSV/album</a></td>
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<tr>
<td>Current Projects</td>
<td><a href="https://oceanai.mit.edu/pavlab/proj/seatrain">https://oceanai.mit.edu/pavlab/proj/seatrain</a></td>
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<td><a href="https://oceanai.mit.edu/pavlab/proj/iitchs">https://oceanai.mit.edu/pavlab/proj/iitchs</a></td>
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<tr>
<td>Recent Events</td>
<td><a href="https://oceanai.mit.edu/media/Aug3121-SeaTrain/album">https://oceanai.mit.edu/media/Aug3121-SeaTrain/album</a></td>
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<td><a href="https://oceanai.mit.edu/media/Oct1821-SeaTrainTests/album">https://oceanai.mit.edu/media/Oct1821-SeaTrainTests/album</a></td>
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</tbody>
</table>

Recent Publications

2024 (1 item)


2023 (3 items)

2. Tyler Paine and Michael Benjamin. An ensemble of online estimation methods for one degree-of-freedom models of unmanned surface vehicles; applied theory and preliminary field results


**2021 (2 items)**


**2019 (1 item)**


**2018 (2 items)**


**2017 (2 items)**


**2016 (1 item)**

Current Projects

MIT 2.680
The Herons are the lab vehicles for MIT 2.680 Marine Autonomy, Sensing and Communications. https://oceanai.mit.edu/2.680.

DARPA Sea Train
The Herons are test platforms for the MIT team involved in the DARPA TTO Sea Train project. Field tests are comprised of four-vehicle convoysing missions with algorithms for mustering and convoysing tested with Herons. https://oceanai.mit.edu/pavlab/seatrain.

Project: IITCS
In a collaboration with MIT Lincoln Laboratory, the Herons are used for field testing multi-vehicle mission planning software using the MIT-LL IITCS planning software and MIT’s MOOS-IvP autonomy software. https://oceanai.mit.edu/pavlab/iitcs.
References


