



Mini Checkpoint: Tremor Reduction Assessment in Microlaryngeal Surgery

Team

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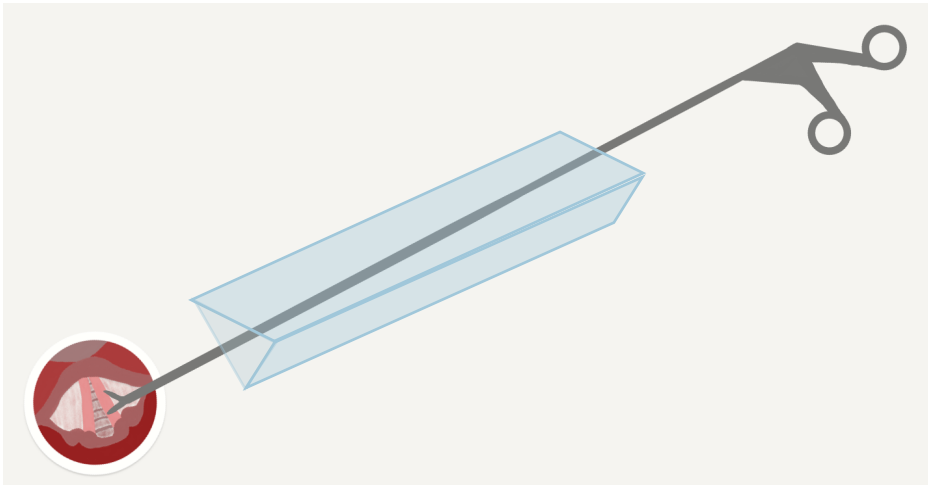
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Project Overview

Goal: Perform user study to assess the degree of tremor reduction in robotic microlaryngeal surgical procedures on cadaveric phantoms

- **Aim 1:** Develop/adapt surgical tool tracking software using microscope video (with colored instruments)
- **Aim 2:** Conduct user study & reduce data
- **Aim 3:** Write paper with surgeons



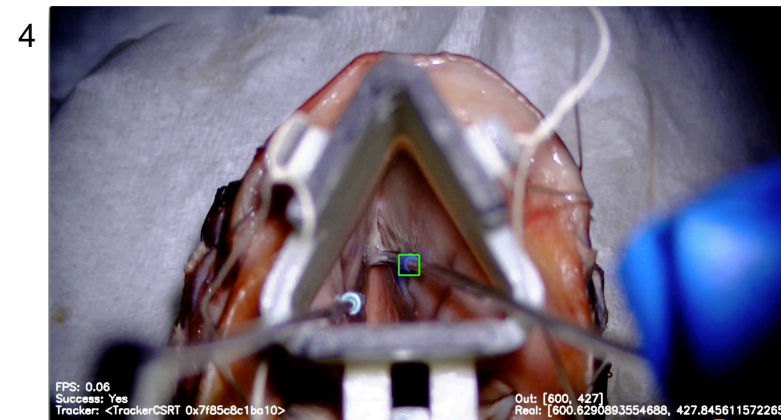
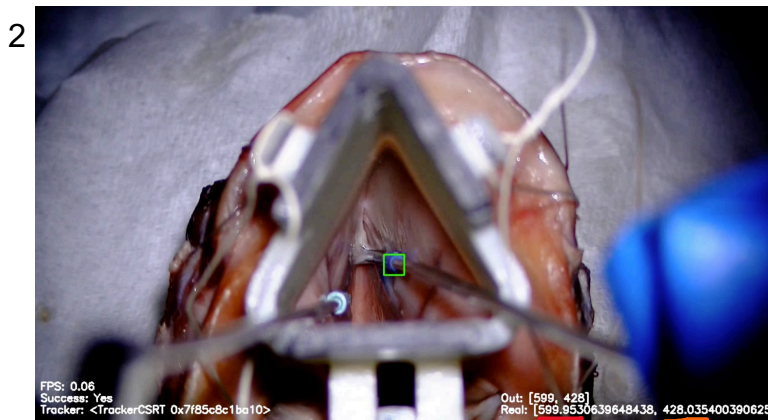
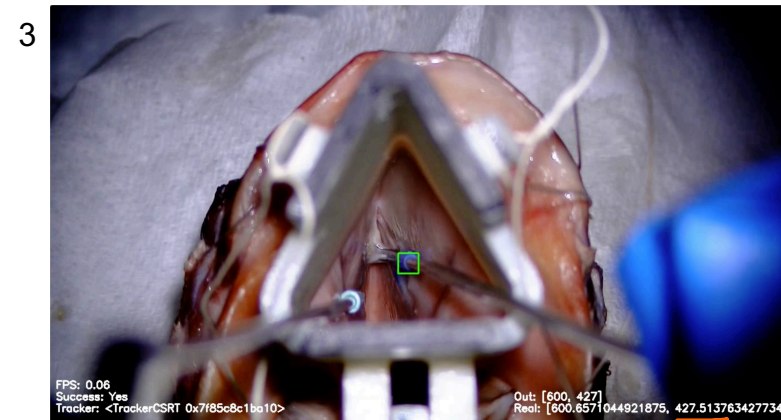
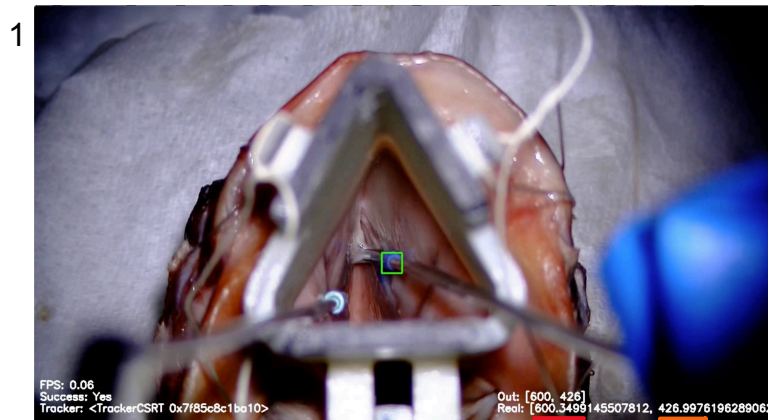
Product rendering of Galen Mark 2 from Galen Robotics Inc.
Retrieved from <https://www.artstation.com/artwork/W286BX>

Deliverables

Deliverables		Date	Status
Minimum	Experimental apparatus	03/15/2020	Met
	Documented code for surgical tool tracking software	03/25/2020	Met
Expected	Experimental data	04/07/2020	Met
	Documented code for tremor reduction assessment	04/07/2020	Delayed
	Report	04/30/2020	Delayed
Maximum	Academic paper	05/13/2020	On schedule

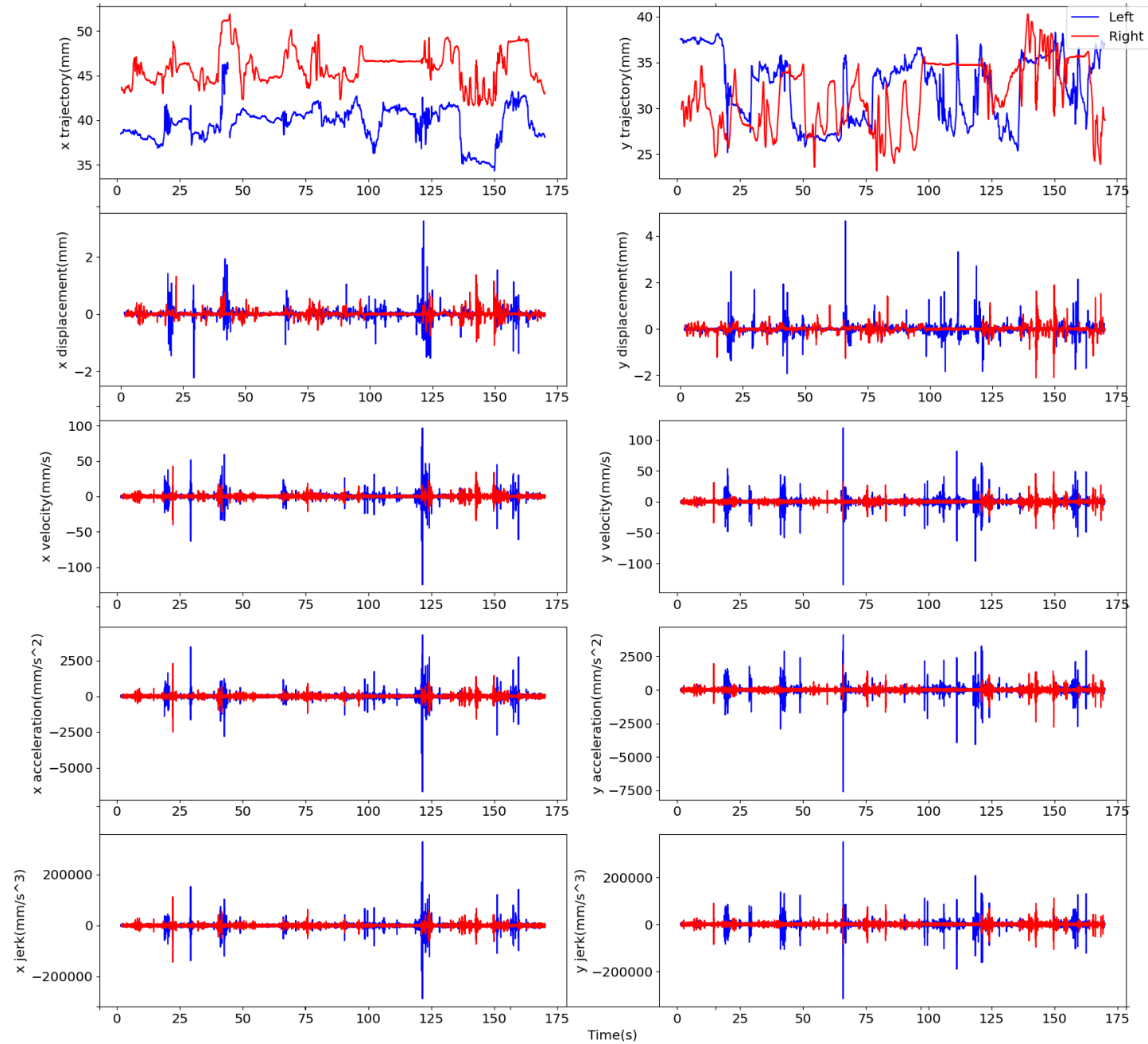
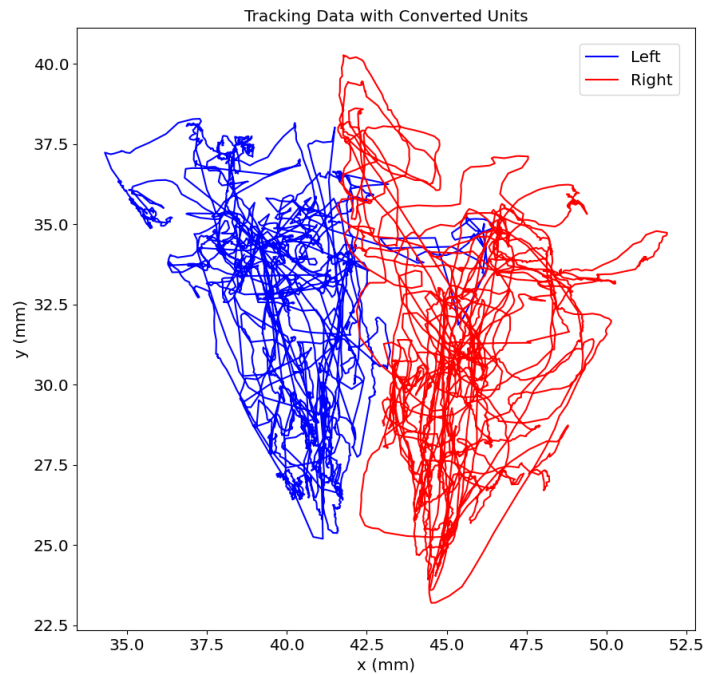
Difficulties

- “Shaking Tracker” → *approx. 2-week delay*
 - Was a result of rounding error
 - Had to reacquire tracking data



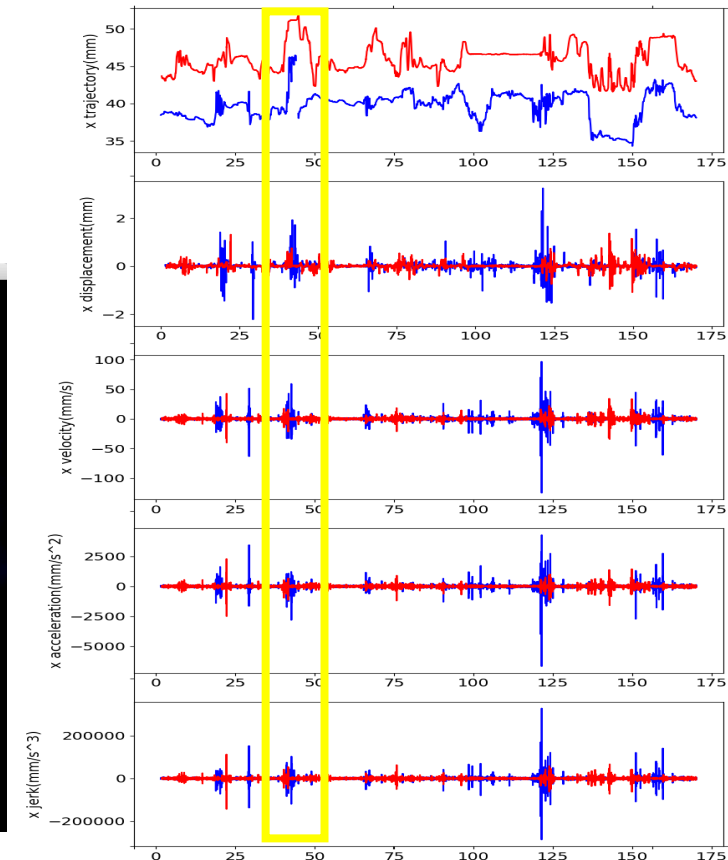
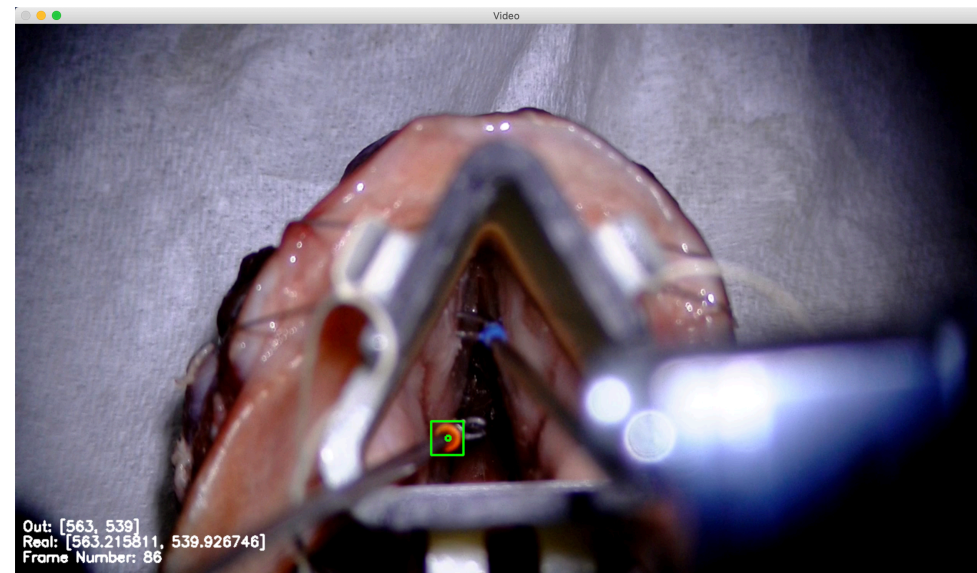
Expected Results

- Results on:
 - Economy of Motion Analysis
 - Frequency Analysis



Currently Working On

- Economy of motion analysis and frequency analysis
- Live plot + video visualization
- Documentation for tremor reduction assessment pipeline
- Final presentation
- Final report



Thank you