

# “You Can’t See Me” - Developing an Optical Measurement Tracking System for Minimally Invasive Spinal Surgical Drills.

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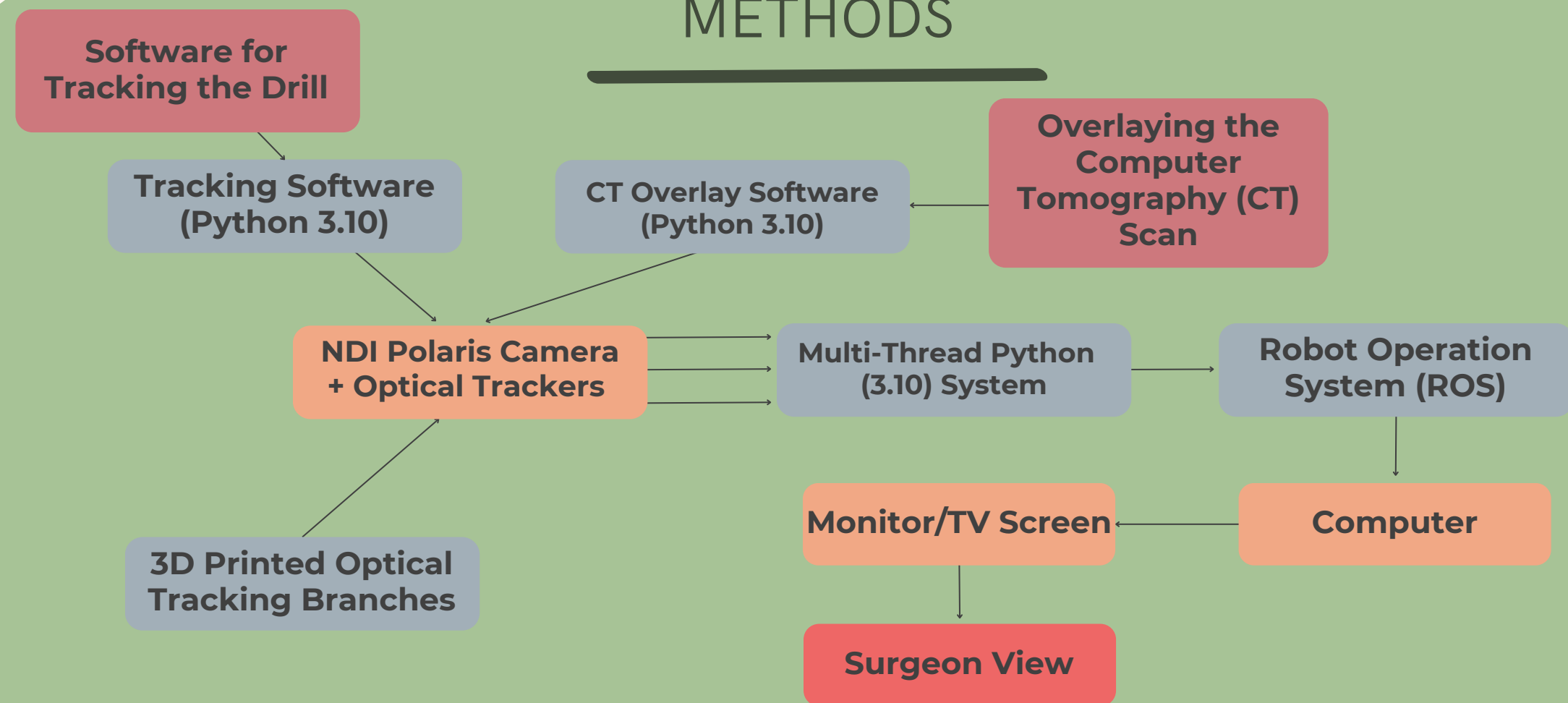
## INTRODUCTION

- ☞ Minimally invasive spinal surgeries provide faster healing times when compared to traditional methods.
- ☞ To reduce exposure from CT imaging, optical measurement tracking (OMT) tools use CT scans to see where surgical components are placed.
- ☞ There are no spinal drills or beveling systems that use OMT, requiring surgeons to estimate where to drill or bevel.
- ☞ Minimally invasive surgeries require immense training. The steep learning curve makes inexperienced physicians struggle with the technology, and with identifying anatomy during the procedure.

## OBJECTIVE

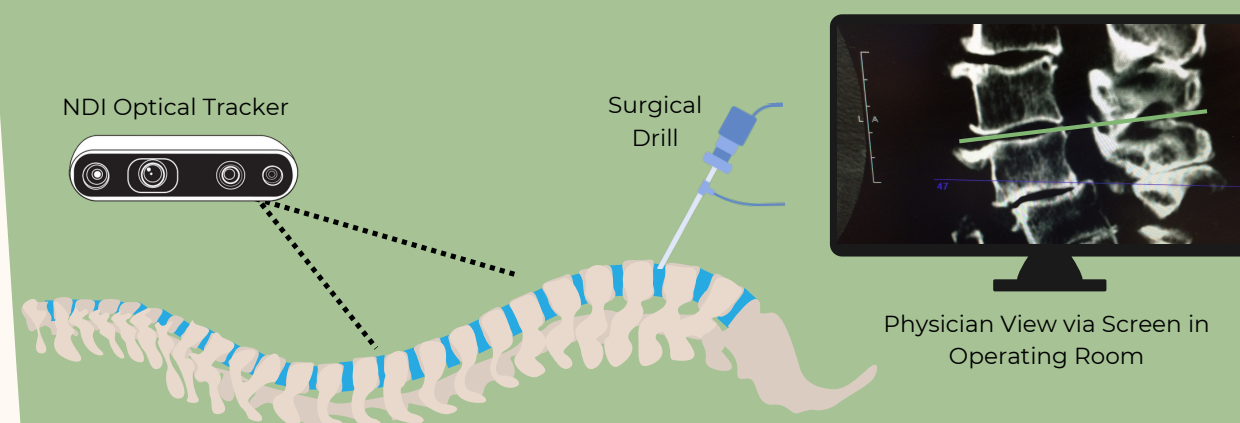
- ☞ Develop an OMT system for spinal surgical drills.
- ☞ Create an augmented reality system that allows physicians to "see" the CT scan image of the spine as they are conducting surgery.

## METHODS



## RESULTS

- ☞ A trackable drill system was created and was able to track the drill system.
- ☞ Currently, we are adding the CT scan overlay to the system.



## CONCLUSION

- ☞ OMT systems for minimally invasive spinal surgery are feasible to create.
- ☞ OMT systems may prove useful for training and helping young surgeons.
- ☞ Further research should be conducted on haptic feedback and image identification for these tools.

## REFERENCES

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