

# Closed-Loop Active Compensation for Needle Deflection and Target Shift During Cooperatively Controlled Robotic Needle Insertion

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**Abstract**—The abstract by Will goes here.

**Index Terms**—IEEE, IEEEtran, journal, L<sup>A</sup>T<sub>E</sub>X, paper, template.

## I. INTRODUCTION

**T**HIS demo file will be edited by Will. It is intended to serve as a “starter file” for IEEE journal papers produced under L<sup>A</sup>T<sub>E</sub>X using IEEEtran.cls version 1.8b and later. I wish you the best of success.

mds

August 26, 2015

### A. Subsection Heading Here

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1) *Subsubsection Heading Here*: Subsubsection text here.

## II. METHODS AND MATERIALS

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## III. CONCLUSION

The conclusion goes here.

### APPENDIX A

#### PROOF OF THE FIRST ZONKLAR EQUATION

Appendix one text goes here.

### APPENDIX B

Appendix two text goes here.

## ACKNOWLEDGMENT

The authors would like to thank...

## REFERENCES

- [1] H. Kopka and P. W. Daly, *A Guide to L<sup>A</sup>T<sub>E</sub>X*, 3rd ed. Harlow, England: Addison-Wesley, 1999.

**Patrick Donelan** Biography text here.

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**Will Yingling** Biography text here.

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