

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^AT_EX, paper, template.

I. INTRODUCTION

THIS demo file will be edited by Will. It is intended to serve as a “starter file” for IEEE journal papers produced under L^AT_EX using IEEEtran.cls version 1.8b and later. I wish you the best of success.

mds

February 7, 2023

A. Subsection Heading Here

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

II. METHODS AND MATERIALS

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A. Feature Localization

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B. Active Compensation

III. RESULTS

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IV. DISCUSSION

The conclusion goes here.

All authors are software engineers in their professional life.

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^AT_EX*, 3rd ed. Harlow, England: Addison-Wesley, 1999.

Patrick Donelan Biography text here.

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Debbie Guenther Biography text here.

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Arjan Gupta Arjan Gupta is an Embedded Software Engineer employed by Lindsay Corporation. He graduated from the University of Kansas in May 2017 with a Bachelor of Science in computer engineering and a minor in mathematics. He is currently pursuing his Master of Science in robotics engineering at Worcester Polytechnic Institute.

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Will Yingling Biography text here.