

Intelligent Sensor Fusion with Deep Learning Algorithm

Shehroz Bashir Malik
Department of Electronic Engineering
Hochschule Hamm-Lippstadt
Lippstadt, Germany
shehroz-bashir.malik@stud.hshl.de

Abstract—Describe in a model-based design manner

1)the Deep Learning approach and

2)make an implementation of the algorithm

Index Terms—Sensor Fusion, Deep Learning, Computer vision

I. INTRODUCTION

Paper about sensor fusion, deep learning etc

II. DEEP LEARNING

Talk about what is deep learning, why is it needed, why has it gotten popular so fast. Perhaps a diagram or two? Avoid talking about ISF w/ DL here

III. INTELLIGENT SENSOR FUSION

talk about ISF is, how it works, use the book you got from the library, use the paper you already have plus the other one that goes more in depth [1] [2]

IV. DL WITH ISF

The way i see it so far is that i can get inputs from multiple sensors, combine them together and apply machine learning techniques to the data. Use clustering or classification to find some meaning in that data. The trick would be find a way to involve CNN. At this stage everything looks like it can be solved by linear regression. Definitely have more reading to do.

V. IMPLEMENTATION

SMOKE DETECTOR USING MULTIPLE SENSORS?
SOMETHING WITH LIDARS?
SOMETHING SOMETHING WITH LIGHT SENSORS?

A. *Diagrams*

B. *Methodology*

C. *Results*

VI. CONCLUSION

REFERENCES

- [1] J. D. Choi and M. Y. Kim, "A sensor fusion system with thermal infrared camera and lidar for autonomous vehicles: Its calibration and application," in *2021 Twelfth International Conference on Ubiquitous and Future Networks (ICUFN)*, 2021, pp. 361–365.
- [2] Y. Cui, R. Chen, W. Chu, L. Chen, D. Tian, Y. Li, and D. Cao, "Deep learning for image and point cloud fusion in autonomous driving: A review," *IEEE Transactions on Intelligent Transportation Systems*, vol. 23, no. 2, pp. 722–739, feb 2022. [Online]. Available: