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SCUOLA DI INGEGNERIA INDUSTRIALE
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EXECUTIVE SUMMARY OF THE THESIS

Title of the thesis

LAUREA MAGISTRALE IN PHYSICS ENGINEERING - INGEGNERIA FISICA

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1. Introduction

[1]

2. Lithium-ion Battery Abuse Testing

[2-4]

3. Developed Software

Algorithm 1 Segmentation algorithm outline.

```
1: Compute threshold
2: Segment ct[0]
3: i = 1
4: while i < T do
5:   Segment ct[i]
6:   Propagate labels from mask[i-1] to mask[i]
7:   i = i + 1
8: end while
9: Filter mask
```

[5]

4. Results

5. Conclusions

A final section containing the main conclusions of your research/study have to be inserted here.

References

- [1] Reiner Korthauer, editor. *Lithium-Ion Batteries: Basics and Applications*. Springer, Berlin [Heidelberg], 2018.
- [2] Qingsong Wang, Ping Ping, Xuejuan Zhao, Guanquan Chu, Jinhua Sun, and Chunhua Chen. Thermal runaway caused fire and explosion of lithium ion battery. *Journal of Power Sources*, 208:210–224, June 2012.
- [3] J. Pfaff, M. Fransson, L. Broche, M. Buckwell, D. P. Finegan, S. Moser, S. Schopferer, S. Nau, P. R. Shearing, and A. Rack. In situ chamber for studying battery failure using high-speed synchrotron radiography. *Journal of Synchrotron Radiation*, 30(1):192–199, January 2023.
- [4] Philip J. Withers, Charles Bouman, Simone Carmignato, Veerle Cnudde, David Grimaldi, Charlotte K. Hagen, Eric Maire, Marena Manley, Anton Du Plessis, and Stuart R. Stock. X-ray computed tomography.

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- [5] Matteo Venturelli. Fasttomo repository,
github.com/venturellimatteo/fasttomo,
February 2024.