POLITECNICO
MILANO 1863

SCUOLA DI INGEGNERIA INDUSTRIALE
E DELL'INFORMAZIONE

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, 3, 4]

3. Developed Software

Algorithm 1 Segmentation algorithm outline.

```
Compute threshold
Segment ct[0]
i = 1
while i < T do
    Segment ct[i]
    Propagate labels from mask[i-1] to mask[i]
    i = i + 1
end while
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, ed. *Lithium-Ion Batteries: Basics and Applications*. Trans. by Michael Wuest. Berlin [Heidelberg]: Springer, 2018.

[2] Qingsong Wang et al. "Thermal Runaway Caused Fire and Explosion of Lithium Ion Battery". In: *Journal of Power Sources* 208 (June 2012), pp. 210–224.

[3] J. Pfaff et al. "In Situ Chamber for Studying Battery Failure Using High-Speed Synchrotron Radiography". In: *Journal of Synchrotron Radiation* 30.1 (Jan. 2023), pp. 192–199.

[4] Philip J. Withers et al. "X-Ray Computed Tomography". In: *Nature Reviews Methods Primers* 1.1 (Feb. 2021), pp. 1–21.

[5] Matteo Venturelli. *Fasttomo Repository*. https://github.com/venturellimatteo/fasttomo. Feb. 2024.