**Summary Notes**

Scientific Writing and Presentation Skills 2 (CSE6991)

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* Turn in the written notes via email at [wy.shin@yonsei.ac.kr](mailto:wy.shin@yonsei.ac.kr) as soon as the class is over.

1) **Presentation session**

|  |  |
| --- | --- |
| Speaker’s name | 조경은 |
| Topic & paper titles | Introduction of Li-ion battery modeling  (survey and tutorial) |
| Problem definition  (Fill in at least 2 lines) | carbon reduction 🡪 change the move to electricity industry.   * Li-ion battery management are crucial because high degree of battery makes dangerous. However, they have benefits such as high energy density and long lifespan. * LIB 모델링에 여러가지 방법이 있지만, 물리적 현상을 잘 설명하는 electrochemical 방법에 집중해서 연구 |
| Summary of technical contributions  (Fill in at least 4 lines) | LIB modeling (2가지 방법)   * Electrochemical (physics based governing equation) * computational cost expensive but simulate electrochemical reactions of LIB cells   + P2D 🡪 (simplify) SPM/SPMe   + SPM : P2D에서의 여러 개 particle이 있지만, 1개의 particle에 집중해서 문제를 품 (Include potential drop in the electrolyte)  🡪 accuracy는 P2D보단 떨어지겠지만, computational cost 측면에서 이득을 볼 수 있다. * Empirical : low computational cost but not explain physics behavior.   + NN, ECM |
| Empirical findings  (Fill in at least 4 lines) | Application of LIB modeling   * SOC model : Charging of battery (overcharge and over discharge 되지 않게 하는 것이 중요) * SOH model : the degree of battery aging (SOC에 영향을 끼치는 요소이기도 함) * Fast charging: optimization problem (reduction of time and minimize of battery aging) |
| Discussion and questions  (Fill in at least 3 lines) | 현재 산업 전반에서 2차 전지를 사용하고 있지만 안전성이나 효과에 대한 검증이 필요하다. 이를 정확히 설명하기 위해서는 배터리 상태를 반영하여 모델링 하는 것이 필수적이다. 하지만, 배터리 내부 상태에 대한 실험적 데이터를 모으는데 비용이 많이 들고, 모델링의 정확도나 computational cost 측면에서 여전히 많은 도전과제를 안고 있다. |

2) **Writing session**

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| Speaker’s name | 김원종 |
| Topic | Noun, Pronoun, Verb |
| Summary of contents  (Fill in at least 4 lines) | Noun  Pronoun (Replacing a noun)   * Should have an antecedent   + Unclear antecedent     - In machine learning, a Relu function was developed as an activation function. This prevents a gradient loss.   🡪 this가 unclear한 (Relu, before sentence, an activation function) 경우가 많을 수 있음!! 🡪 This 🡪 This development 라고 쓰면 좋아   * Nonexistent antecedent (each, some, …etc.)   + We   + Personal pronoun: gender(masculine pronoun조심!)   + Relative Pronoun:   1) which: Nonrestrictive relative (…, which)/ proposition + which/that+which, those+that, that+that(X)  2) that: restrictive relative  Verb   * Tense   + 설명, 실험결과, abstract : present / conclusion, objects’ behavior : past * Mood   + 가정법 : research에서는 가정법을 잘 쓰진 않는다. * Voice (active vs. passive)   + Passive voice : unclear actor/emphasis of receiver(목적어) * Coordinate Conjunctions   + And : plural but 같은 것에 관해선 single   + Or/nor : 가까운 noun에 수일치 * Collective subject   + Name of group, Each: single   + Most, all, some, half, …: agrees w/ # of noun   + Plural noun to indicate single measurement: single     - Ex, three hours is … |
| Discussion and questions  (Fill in at least 3 lines) | 분사형의 경우, 과거를 쓰나 과거분사를 쓰나 미묘한 차이는 있지만 앞으로 논문을 읽을 때 주의를 해서 읽어보면 좋다!  요즘 논문의 gender와 관련해선 (s)he, he/she, his/her 이렇게 합쳐서 쓰는 경우가 많다. 아니면 여성형으로 칭하기도 한다. |