GEDU501 Scientific Writing **POSLEC**

Name: kimheeseo Date:

Research Paragraph

About your research

Instructions

1. *Answer the following questions as notes*
2. *Use the notes to write one paragraph (5-10 sentences) about your laboratory and your research *feel free to use your notes from the* ***Explaining your Research*** *document*

Paragraph Brainstorming Notes

Question		**Notes**
What is your research topic?		• Channel coding with deep learning
Why is this topic important?		• By optimizing parameters through deep learning method, adjust tradeoff of complexity and performance.
Describe your experimentation:	Key Problem(s) / Research Question(s)	• What deep learning techniques (method) were used? • How much has performance improved? • How much has complexity changed? • How many times is the train in total? • What's the difference (improvement) from previous study?
	Experimental Process: What experiments or tests do you perform to learn about or solve this problem?	• Deep learning (used in computer science : SC is major part of deep learning, but communication system just use deep learning as Tools)should be adjusted to become an appropriate deep learning model in the field of communication. • Existing communication-related domain knowledge is required.(domain knowledge) • Set which parameters to train.
How will this research be beneficial to the field of study? or How can it be applied outside of research? (i.e. commercial use or useful for everyday people)		• In order to be applied to hardware (semiconductor), complexity must be low. So, improvement of complexity makes the method suitable for hardware.

서식 있음: 글꼴 색: 텍스트 1

Research Paragraph

*In the space below write **one paragraph** about the research you are doing. Please be sure to follow appropriate paragraph formatting.*

~~Let me introduce my major. My major is c~~Channel coding~~,~~ improves communication quality by adjusting complexity and performance. Since 2018, deep learning has been used in ~~this~~wireless~~e~~ communication field. The ~~In c~~communication ~~system's~~ field's deep learning methods deviate from ~~, rather than a method only for communication system,~~ the computer science deep learning methods and are continuing to be ~~of research in computer science(CS : a field of active research on methodology[technique]), which is conducting active research, is being~~ transformed to better suit the communication field. The communication ~~system's~~ research's primary channel coding challenge to solve ~~with channel coding~~ is to improve the tradeoff for complexity and performance. Complexity and performance have a ~~P~~proportional relationship~~;~~. ~~Then,~~ performance increases as complexity increases. ~~And~~ This is important because ~~Channel~~ channel coding can be applied not only to communication but also to hardware such as semiconductors, where complexity is important. ~~Because~~ However, if the hardware is too complex, it can't be done. Therefore, the direction of this~~e~~ study is ~~that the~~to obtain performance ~~should be~~ that is as similar as possible to the algorithm representing the optimal value while lowering the complexity as much as possible. ~~So~~ Thus, the goal of this research is to reduce complexity by applying deep learning. Specially, ~~I am interested~~this work focuses on ~~in~~ the LSTM technique among the methods, ~~and I am interested in the method~~ because it is a suitable method for long code messages. So, Currently deep learning is still limited in research on long codes due to complexity problem, but the reason why long-code messages are needed is because the condition of a communication system with good performance is to send long messages accurately and quickly, so algorithms research's purpose on suitable for long-code is essential.

서식 있음: 글꼴 색: 텍스트 1

메모 포함[NP1]: Wireless communication? Start with a specific context.

서식 있음: 글꼴 색: 텍스트 1

서식 있음: 글꼴 색: 텍스트 1

서식 있음: 글꼴: (영어) Asap, (한글) Asap, 글꼴 색: 텍스트 1

서식 있음: 글꼴 색: 텍스트 1

메모 포함[NP2]: Explain context earlier on.

서식 있음: 글꼴 색: 텍스트 1

서식 있음: 글꼴 색: 텍스트 1

서식 있음: 글꼴 색: 텍스트 1

서식 있음: 글꼴 색: 텍스트 1