APPLICATION LETTER

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RESEARCH INTERESTS

Research interests

Applied microeconomic theory (Dynamic mechanism design, Information design)

Application areas

Electricity markets, Two-sided platforms

Research projects

[Working paper] ***Lovely and (less) lonely dynamic Vickrey sequential auction*** , To be submitted to *Economics and computation 2021* conference

[Working paper] ***(Working title) Buffer extraction by indirect network effects in two-sided markets***

COURSE OF GRADUATE STUDY

Courses

Econometrics (Ph.D. course) I	*KAIST*
Econometrics (Ph.D. course) II	*KAIST*
Microeconomic theory (Ph.D. course) I	*Texas A&M university*
Microeconomic theory (Ph.D. course) II	*Texas A&M university*
Microeconomic theory (Ph.D. course) IV	*Texas A&M university*
Game theory: communication and information (Ph.D. course)	*(Audit) UNC-Chapel Hill*
Information design and Bayesian Persuasion (Econ Dept. Reading group)	*Texas A&M university*

Education

Bachelor of Science	*Mathematical Sciences, KAIST*
Bachelor of Engineering	*Industrial & Systems Engineering, KAIST*
Ph.D. (currently enrolled-3^{rd} year)	*Computer Engineering, Texas A&M*

Short description of graduate study

I study applied microeconomic theory problems motivated from electricity markets and two-sided platforms. The common characteristic of two markets is they are markets operating in real time. I am specifically interested in creating theoretical knowledge that help understand the operational aspects of such markets. While not listed in course lists, I have been focusing on equipping strong background in mathematics for analysis of sequential, dynamic and stochastic online decision making.

In the paper *'Lovely and (less) lonely dynamic Vickrey sequential auctions'*, I discuss extension of impossibility results in multi-item VCG auction provided in Ausbell and Milgrom's paper *'The Lovely but Lonely Vickrey Auction'* to sequential auctions such as Electricity wholesale sequential auctions. We further show that there always exists a level of storage technology that overcomes this impossibility results.

In the paper '*Buffer extraction by indirect network effects in two-sided markets (working title)'*, we discuss that investments in buffer technology such as demand response in electricity markets can be fully extracted by the counterpart in the other side.