Curriculum Vitae

Hyojae Lim

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Research Interest

- 1. Approximation theory on various function spaces using frames
- 2. Tight wavelet frame construction using the extension principles
- 3. Developing proof-generating models together with interactive theorem provers
- 4. Abstract harmonic analysis unitary representation theory on locally compact groups

Education

Mar. 2017 - present	Ph.D. Candidate in Mathematics, Yonsei University, Korea		
	Advisor : Prof. Youngmi Hur		
Mar. 2012 - Feb. 2017	B.S. in Mathematics, Konkuk University, Korea		

Awards & Grants

2024	Travel Grant for particiting Trimester Program "Prospects of Formal Mathematics" from Hausdorff Research Institute for Mathematics (HIM), Germany		
	Math & CSE Joint Poster Exhibition (2nd Place) from School of Mathematics and Computing, Yonsei University, Korea		
2023	Travel Grant for particiting "Machine Assisted Proofs" from Institute for Pure & Applied Mathematics (IPAM), USA		
2021	Dissertation Fellowship (DF) from School of Mathematics and Computing, Yonsei University, Korea		
	Math & CSE Joint Poster Exhibition (1st Place) from School of Mathematics and Computing, Yonsei University, Korea		

Publications

- New Tight Wavelet Frame Constructions Sharing Responsibility Y. Hur and H. Lim Submitted
- 2. Simplifying Formal Proof-Generating Models with ChatGPT and Basic Searching Techniques (experience report) Submitted

- Wavelet Series Expansion in Hardy Spaces with Approximate Duals Y. Hur and H. Lim Accepted to Analysis Mathematica
- Understanding the Scattering Transform using Univariate Signals
 Y. Hur and H. Lim
 Proceedings of 11th International Congress on Image and Signal Processing, BioMedical Engineering and Informatics (CISP-BMEI), 2018, pp. 1-7.

Conferences & Talks

2024	KMS Spring Meeting , Daejeon, Korea New Tight Wavelet Frame Constructions Sharing Responsibility	
	Yonsei Math & CSE Joint Poster Exhibition, Seoul, Korea A Collaborative Method for Tight Wavelet Frame Construction	
2023	Mathematical Image Processing Workshop, Yonsei University, Seoul, Korea	
	1st Konkuk University Mathematics Alumni Workshop, Seoul, Korea Wavelet Series Expansion in Hardy Spaces using Approximate Duals	
	KMS Fall Meeting , Seoul, Korea On Construction of Tight Wavelet Filter Bank using the UEP and Beyond	
	KMS Spring Meeting , Daejeon, Korea Wavelet Series Expansion in Hardy Spaces with Approximate Duals	
	Machine Assisted Proofs, IPAM, Los Angeles, USA	
2022	KWMS Leaders Forum for Next Generation Women Mathematical Science Major , Gwangju, Korea <i>Model Development of Formal Language Suitable for Mathematical Proof</i>	
2021	KSIAM Fall Meeting, Busan, Korea	
	Yonsei Math & CSE Joint Poster Exhibition, Seoul, Korea Wavelet Series Expansion via a Wavelet System on Various Function Spaces	
2020	KSIAM Fall Meeting, Jeju, Korea	
	Yonsei Math & CSE Joint Poster Exhibition, Seoul, Korea New Bijectivity Result for $H^p(\mathbb{R})$ via Wavelet Frames	
	KMS Spring Meeting, Online	
2019	KIAS Geometry Winter School, Gangwon, Korea	
	East Asian Conference in Harmonic Analysis and Applications, Seoul, Korea	
	KSIAM Spring Meeting , Seoul, Korea Understanding the Scattering Transform using Univariate Signals	
2018	YPDE , KIAS, Seoul, Korea Understanding the Scattering Transform using Univariate Signals	
	International Congress on Image and Signal Processing, BioMedical Engineeringand Informatics (CISP-BMEI) 2018, Beijing, China Understanding the Scattering Transform using Univariate Signals	
	industrial Professional Academy, MINIS, Suwon, Korea	

	KWMS International Conference, Seoul, Korea		
	Future of Information and Communication Conference (FICC) 2018, Singap		
	KMS Spring Meeting, Seoul, Korea		
	KIAS Geometry Winter School, Gangwon, Korea		
2017	KIAS Geometry Winter School, Gangwon, Korea		
2016	KIAS Geometry Winter School, Gangwon, Korea		

Teaching

Teaching Assistant & Grading

Fall 2022 (Yonsei)	MAT3118-01	Partial Differential Equation (undergraduate)
	MAT8440-01	Topics in Partial Differential Equation (graduate)
Spring 2022 (Yonsei)	MAT3105-01	Analysis II (undergraduate)
	MAT6431-01	Topics in Fluid Mechanics II (graduate)
Fall 2021 (Yonsei)	MAT1012-01	Calculus II (undergraduate)
	MAT6430-01	Topics in Fluid Mechanics (graduate)
Summer 2021 (Yonsei)	MAT1012-01	Engineering Mathematics II (undergraduate)
Spring 2021 (Yonsei)	MAT1011-04,06	Engineering Mathematics I (undergraduate)
Fall 2020 (Yonsei)	MAT6450-01	Real Analysis II (graduate)
	MAT1002-05	Calculus & Vector Analysis II (undergraduate)
Summer 2020 (Yonsei)	MAT1012-04	Engineering Mathematics II (undergraduate)
Spring 2020 (Yonsei)	MAT6400-01	Real Analysis I (graduate)
Fall 2019 (Yonsei)	MAT3104-01,02	Analysis I (undergraduate)
Spring 2019 (Yonsei)	MAT2421-01	Ordinary Differential Equation (undergraduate)
	MAT2011-02	Linear Algebra and its Application (undergraduate)
Fall 2018 (Yonsei)	MAT3104-01	Analysis I (undergraduate)
Spring 2018 (Yonsei)		Calculus I (undergraduate)

Computer Languages

Python, Lean, MATLAB