

# Seung uk Jang

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## Contact Details

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## Employment

2023– **Post-doc**, *Université de Rennes I*, Rennes, Bretagne, France.  
UMR CNRS 6625, Groups of Algebraic Transformations (GOAT)  
Mentor: Serge Cantat

## Education

- 2014–2023 **Ph.D of Math**, *University of Chicago*, Chicago, IL, USA.  
Mathematics  
Advisors: Simion Filip; Alex Eskin  
Thesis: Hyperkähler Kummer Rigidity and the Vieta Involutions on Tropical Markov Cubics
- 2021 **Master of Science**, *University of Chicago*, Chicago, IL, USA.  
Mathematics
- 2013–2014 **Master of Science**, *KAIST*, Daejeon, South Korea.  
Mathematical Sciences
- 2009–2013 **Bachelor of Science**, *KAIST*, Daejeon, South Korea.  
Mathematical Sciences, with minor on Computer Science, and Honor program  
*Summa cum Laude*, 4.25/4.3 in GPA  
**Valedictorian** for graduate ceremony
- 2006–2009 **High School**, *Korea Science Academy of KAIST*, Busan, South Korea.

## Publications

- 2023 **Vieta Involutions on Tropical Markov Cubics**, *Seung uk Jang*.  
available as a preprint in [arXiv:2306.11357](https://arxiv.org/abs/2306.11357)
- 2021 **Kummer Rigidity for Hyperkähler Automorphisms**, *Seung uk Jang*.  
available as a preprint in [arXiv:2109.06722](https://arxiv.org/abs/2109.06722)
- 2017 **Quantum unique ergodicity and the number of nodal domains of eigenfunctions**, *Seung uk Jang and Junehyuk Jung*.  
Electronically published in J. Amer. Math. Soc., 2017. 06. 02.,  
<http://dx.doi.org/10.1090/jams/883>

## Academic Talks

*Department of Mathematics, University of Chicago*  
5734 S University Ave, Chicago, IL, 60637, USA  
✉ [seungukj@uchicago.edu](mailto:seungukj@uchicago.edu)

- 2023 **Vieta Involutions on Tropical Markov Cubics**, *Poster session, CIRM Research School 2794* Renormalization and Visualization for packing, billiard, and surfaces.
- 2023 **Do Tropical Markov Cubics dream of Hyperbolic Origami?**, *Multiple places: KAIST, SNU, KIAS VISGAT, and IBS CCG.*  
Talks based on the work *Vieta Involutions on Tropical Markov Cubics*, through various approaches including number theory, geometric topology, and dynamical systems.
- 2022 **Kummer Rigidity for Hyperbolic Hyperkähler Automorphisms**, *BiSTRO mini conference.*
- 2022 **Currents and Plurisubharmonic Potentials**, *IUPUI.*  
Presented in learning talks of 2022 Several Complex Dynamics School
- 2022 **Discovering a nontriviality of the  $\delta$ - $\epsilon$  definition, in a math way**, *University of Chicago.*  
UChicago Pedagogy Seminar, Dept. of Math
- 2021 **Kummer Rigidity for Hyperbolic Hyperkaehler Automorphisms**, *University of Chicago.*  
UChicago Dynamics Seminar
- 2019 **A Mechanical model for Lorenz System**, *KIAS.*  
introductory material for the Lorenz system and its analysis
- 2015 **Quantum ergodicity and the number of nodal domains of eigenfunctions**, *SNU.*  
work done with Junehyuk Jung
- 2009 **Lattice Edge Number of Figure Eight Knot**, *2009 KMS-AMS Joint Meeting*, poster session.  
work done with Hun Kim, Gyo Taek Jin, Choon Bae Jeon, Sang Hyuk Moon, Sang Hyun Park, Yoo Shin Song
- 2007 **Generalizing 2D Geometric Properties to 3D With the Aid of DGS**, *ATCM 2007*, contributed talks.  
work done with Dohyun KIM, Hyobin LEE, Youngdae KIM

## Experience

### Teaching

- Fall 2019 – **Lecturer**, *University of Chicago*, Chicago.
- Fall 2022 Graduate Student Lecturer for various courses, in:
- Frechman Calculus course (Math 151-153): Fall 2019 – Spring 2020, Fall 2020 – Winter 2021 (Remote), Fall 2021 – Winter 2022
  - Linear algebra (Math 196): Fall 2022
  - *Mathematical Methods for Social Sciences* (Math 195): Spring 2021

### Other Employments

*Department of Mathematics, University of Chicago*  
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- Fall 2016 – **Researcher**, *NIMS*, Daejeon.
- Summer 2019 (Division) Center for Applications of Mathematical Principles  
 Employment as an Alternative military service for Korea  
 Working on public understanding of (industrial) mathematics in Korea, including
- public lectures, generally towards 7th-12th grades students,
  - running and maintaining IMAGINARY exhibitions in Korea, and
  - exploring and developing new items in mathematics that can appeal to general public.

### College Fellows

- Spring 2016 **Basic Theory of Partial Differential Equations**, *Dr. Will Feldman*, U of Chicago.
- Winter 2016 **Basic Theory of Ordinary Differential Equations**, *Prof. Amie Wilkinson*, U of Chicago.
- Fall 2015 **Complex Analysis**, *Prof. Amie Wilkinson*, U of Chicago.

### Grader

- Spring 2014 **Real Analysis**, *Prof. Ji Oon Lee*, KAIST.
- Fall 2012 **Functional Analysis**, *Prof. Ji Oon Lee*, KAIST.

### Seminar Organizer

- 2010 **Undergraduate Math Colloquium**, *KAIST*.

## Honors and Awards

- 2014–2022 **Doctorial Study Abroad Program**.  
 Korea Foundation for Advanced Studies
- 2013–2014 **Kwanjeong Scholarship for Korean Graduate Students**.  
 Scholarship program for graduate students in Korea
- 2011 **Dean's list**.  
 College of Natural Science, KAIST
- 2009–2012 **Korea Student Aid Foundation, Presidential Scholarship**.  
 Scholarship program for undergraduate students in Korea