

BYEONGSU YU

Texas A&M University - Department of Mathematics

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EDUCATION

Ph.D. in Mathematics

Advisor: Dr. Laura Felicia Matusevich

Texas A&M University

📅 May 2022(expected)

M.Sc. in Mathematics

Advisor: Dr. Woong Kook and Dr. Hyuk Kim (Co-advising)

Seoul National University

📅 Aug 2017

B.B.A. in Business Administration

B.Sc. in Mathematics

B.A. in Philosophy

Yonsei University

📅 Aug 2015

PUBLICATIONS

1. *Standard pairs of monomial ideals over non-normal affine semigroups in SageMath*

👤 Byeongsu Yu

Submitted



2. *Standard pairs for monomial ideals in semigroup rings*

👤 Laura Felicia Matusevich and Byeongsu Yu

Submitted.



3. *A study on establishing legal causation of collective hazardous substances cases in a statistical viewpoint*

👤 Dohyun Park and Byeongsu Yu

공익과 인권 (en: Public Interest and Human Rights), Vol. 15, pp. 209-261, 2015



AWARDS & HONORS

➤ *Best Prize in Undergraduate Research*

📍 Yonsei Univ. (Computational Science and Engineering)

📅 Sep 2014

➤ *Award of Excellence in Economics Dissertation Contest*

📍 Maeil Business Newspaper (Seoul, South Korea)

📅 Nov 2009

TALKS AND PRESENTATIONS

POSTERS

📄 *Standard pairs for monomial ideals in semigroup rings*

• Algebra, Geometry and Combinatorics Day - XVIII

📍 UIUC

📅 Mar 07, 2020



TALKS

➤ *Monomial ideals in affine semigroup rings*

• CombinaTexas 2021

📍 Texas A&M Univ.

📅 Feb 2021



➤ *Monomial ideals in affine semigroup rings*

• Graduate Algebra Symposium

📍 (Online)

📅 Oct 2020



➤ *Universal Property via Yoneda Lemma*

• Graduate Student Seminar

📍 Texas A&M Univ.

📅 Nov 2019

➤ *Generalized Ishida Complex*

• Algebra and Combinatorics Seminar

📍 Texas A&M Univ.

📅 Nov 2019

➤ *Integrate $|xy(x+y)|$ over \mathbb{Z}_p with Haar measure*

• Gathering in Graduate Expository Mathematics (GIGEM)

📍 Texas A&M Univ.

📅 Feb 2019



- *Topological Data Analysis on Single-Nucleotide Polymorphism data*
 - Graduate Student Seminar📍 Texas A&M Univ.
📅 Nov 2018
- *Effective Resistance Preserving Isomorphism*
 - Graduate Student Seminar📍 Texas A&M Univ.
📅 Oct 2017
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TEACHING & MENTORING

- *Explorations in Mathematics (MATH 167) – Instructor*
📍 Texas A&M Univ.
📅 Fall 2020

Gave lectures via face-to-face and online simultaneously, wrote lecture notes and 4 exams, wrote weekly quizzes, held weekly office hours.
- *Business Calculus (MATH 142) – Instructor*
📍 Texas A&M Univ.
📅 Summer(1st) 2020, Spring 2020

Gave lectures via face-to-face and online, wrote/graded 3 midterm exams and a final exam, wrote weekly quizzes, held weekly office hours.
- *AWM Peer Mentor*
📍 Texas A&M Univ.
📅 Fall 2019 – present
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Peer-mentor for the first-year mathematics graduate students to help them adapt to new environment and responsibilities.
- *Directed Reading Program Mentor*
📍 Texas A&M Univ.
📅 Spring 2020, Fall 2019
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Discussed weekly with an undergraduate mentee to study mathematical topics outside of the undergraduate course-work.
- *Engineering Calculus I/II (MATH 151/152) – Teaching Assistant*
📍 Texas A&M Univ.
📅 Summer(2nd) 2020, Fall 2019, Summer(2nd) 2018

Wrote/graded weekly Python lab assignments and solution sets, and weekly quizzes.
- *Functions, Trigonometry and Linear Systems (MATH 150) – Teaching Assistant*
📍 Texas A&M Univ.
📅 Spring 2021, Spring 2019, Fall 2018

Lead weekly recitation, wrote and graded biweekly quizzes.
- *Engineering Mathematics III (MATH 251) & Business Calculus (MATH 142) & Applied Algebra (MATH 433) – Grader*
📍 Texas A&M Univ.
📅 Summer 2019, Summer(1st) 2018, Spring 2018

Graded (bi)weekly assignments or quizzes.
- *Linear Algebra (MATH 304/311/323) – Help Session*
📍 Texas A&M Univ.
📅 Fall 2017

Tutoring undergraduate students about junior-level linear algebra courses.

SERVICES & OUTREACH

- CombinaTexas 2021
 Session Chair
 📅 Feb 20-21, 2021
- Student Working Seminar for Algebra and Geometry
 CO-Organizer (w. Pablo Ocal)
 📅 Fall 2020
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- American Mathematical Society Graduate Student Chapter
 Vice Preseident
 📅 Fall 2019 - Spring 2020
- Student Working Seminar for Category Theory
 Organizer
 📅 Summer 2019 – Fall 2019
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- CombinaTexas 2019
 Session Moderator
 📅 Mar 23, 2019
- Integral Bee
 Volunteer
 📅 Mar 26, 2018
- STEMFest
 Volunteer
 📅 Feb 3, 2018
- High School Math Contest
 Volunteer
 📅 Oct 21, 2017
- Math Circle

BUSINESS EXPERIENCE

- *38 Securities – Intern* 📍 Quincy, MA. 📅 Jan 2015 – Feb 2015
Developing algorithmic option trading application using open C++ API from Interactive Brokers.
- *Ars Praxia (former: TREUM) – Research Intern* 📍 Seoul, Korea. 📅 Jan 2013 – Jul 2013
Implemented a time-series analysis of a semantic network generated from 492,754 mentions on Twitter related to two elections, the Seoul city mayoral election of 2011 and the South Korean presidential election of 2012.
- *17th Division, Republic of Korean Army – Sergeant* 📍 Seoul, Korea. 📅 Feb 2011 – Nov 2012
 - Squad leader for the human resource department of the headquarters of the 307 th independent artillery battalion.
 - Reported the quinquennial financial status of the battalion for the financial audit of the Korean Army Headquarters.

LANGUAGES

English, Korean



LaTeX/TikZ



Python, C, Macaulay2



C++

