# TIANHAO WANG

**Mathematics (Pure)**

@ tiw069@ucsd.edu  858-699-6710  github.com/TianhaoW

## EDUCATION

### Bachelor of Science - Mathematics

**University of California San Diego**

Fall 2014 – Spring 2018

- Cumulative GPA: 3.74/4
- Upper Division Major GPA: 3.91/4

### Master of Art - Mathematics

**University of California San Diego**

Fall 2018 – Fall 2019

**Qualifying Exam:**

- Provisional Pass in Algebra
- Provisional Pass in Complex Analysis
- Master Pass in Real Analysis

## FIELDS OF INTEREST

Algebra, Algebraic Number Theory, Functional Analysis

## SKILLS

C++, Java, Python, Web Design (HTML & CSS, JS)

## WORK EXPERIENCE

### Teaching Assistant

Winter 2017 - Fall 2019  UC San Diego Mathematics

- TAed for Calculus, Linear Algebra, Number Theory.
- Hold weekly discussion sections and office hours. Explained course materials, answered students' questions and provided examples.
- Proctored examinations. Scanned and uploaded exams on GradeScope. Graded homework and exams, wrote sample solutions, and provided feedback on students' performance.
- Received undergraduate TA award in June 2018.

### Grader

Fall 2017, Summer 2019  UC San Diego Mathematics

- Grader for Abstract Algebra, Real Analysis. Graded students' weekly homework and provided sample solutions with comments.

### Tutor

Fall 2016  UC San Diego Mathematics

- Tutor for Calculus. Answered students questions about lectures and homework.

## HONORS & AWARDS

- 2017-2018 UC San Diego Physical Science Dean's Undergraduate Awards for Excellence
- 2017-2018 UC San Diego Mathematics Department Undergraduate TA Award
- Phi Beta Kappa Honor Society Membership

## PROJECTS

### Research Paper on Centralizer of Matrices

Summer 2019  UC San Diego

- Independent Research on Centralizer of Matrices.
- Got complete description for centralizer of a matrix in a given field, and also an algorithm with polynomial complexity to generate the explicit $k$-basis for the space of centralizers.
- Paper: https://arxiv.org/abs/1910.13666
- Sample implementation in C++: github.com/TianhaoW/CentralizerOfMatrix

### RTG Reading Group in Algebraic Geometry

Spring 2018  UC San Diego

- Followed "Algebraic Curves" by William Fulton.
- Co-presented "Projective Space and Global Bezout's Theorem" in front of faculties and other groups.
- I presented the proof of Global Bezout's Theorem.

### Reading Paper on Dirichlet's Unit Theorem

Fall 2017  UC San Diego

- Reading Paper for Math 205: Topics in Number Theory
- Followed "Algebraic Number Theory" by Neukirch and "Algebraic Theory of Numbers" by Samuel.
- Used Minkowski's Geometry of Numbers and Convex Body Theorem to prove Dirichlet's Unit Theorem.

### RTG Reading Group in Algebraic Geometry

Winter 2017  UC San Diego

- Followed "Ideals, Varieties, and Algorithms" by Cox, Little.
- Co-presented "The Geometric Version of the Chinese Remainder Theorem" (structural sheaf) in front of faculties and other groups.
- I presented the concepts of sheaf and properties of structural sheaf.