

# Ovidiu-Neculai Avadanei

## Curriculum Vitae

University of California at  
Berkeley-Department of Mathematics  
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**Date of birth** 01/19/1997

## Education

**2019-present:** PhD in Mathematics, University of California at Berkeley, United States of America

Doctoral Advisor: Professor Daniel Tataru

**2016-2019:** Bachelor's Degree in Mathematics, "Alexandru Ioan Cuza" University of Iasi, Romania (I graduated with a perfect GPA in a 10 point system, as valedictorian)

## Research Interests

Nonlinear dispersive partial differential equations, fluid dynamics

## Publications and Preprints

1. A. Ai, O. Avadanei, *Low regularity well-posedness for the generalized surface quasi-geostrophic front equation*, arXiv preprint, arXiv:2311.07551 (2023)
2. A. Ai, O. Avadanei, *Low regularity solutions for the surface quasi-geostrophic front equation*, arXiv preprint, arXiv:2310.20143 (2023)
3. A. Ai, O. Avadanei, *Well-posedness for the surface quasi-geostrophic front equation*, ***Nonlinearity***, Volume 37, Number 5, May 2024
4. A. Ai, O. Avadanei, *Well-posedness for the dispersive Hunter-Saxton equation*, to appear in ***International Mathematics Research Notices***, Volume 2023, Issue 9, May 2023, Pages 7845-7882

## Conferences, Workshops, Summer Schools, and Presentations

### Contributed Talks

1. ***Spring School on Soliton Dynamics***, Texas A&M University, College Station, Texas, USA, March 14-16, 2024
2. ***The 19th Prairie Analysis Seminar***, Kansas State University, Manhattan, Kansas, USA, November 3-4, 2023
3. ***Mathematical Problems in Fluid Dynamics, part 2***, Simons Laufer Mathematical Sciences Institute, Berkeley, California, USA, July 17-August 11, 2023

4. *The Tenth Congress of Romanian Mathematicians*, University, of Pitești, Pitești, Romania, June 30-July 5, 2023
5. *Shanks Workshop on Mathematical Aspects of Fluid Dynamics*, Vanderbilt University, Nashville, Tennessee, USA, February 19-20, 2022

### Seminar Talks

1. *Harmonic Analysis and PDE Student Seminar*, UC Berkeley, Berkeley, CA, USA, September 19, 2023
2. *Harmonic Analysis and PDE Student Seminar*, UC Berkeley, Berkeley, CA, USA, March 7, 2023
3. *PDE and Geometric Analysis Seminar*, University of Wisconsin-Madison, Madison, WI, USA, February 20, 2023
4. *Harmonic Analysis and PDE Student Seminar*, UC Berkeley, Berkeley, CA, USA, October 12, 2021
5. *Graduate Student Working Group*, as part of the *Mathematical problems in fluid dynamics*(Virtual) program, Mathematical Sciences Research Institute, Berkeley, May 5, 2021
6. *Sesiunea Nationala de Comunicari Stiintifice Studentesti de Matematica*, "Alexandru Ioan Cuza" University of Iasi, Romania, July 4-7, 2019

### Conferences attended as participant

1. *Recent developments in wave turbulence theory*, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA, April 5-6, 2024
2. *Advances in Nonlinear Analysis and Nonlinear Waves*, IHES, Le Bois-Marie, France, May 22-26, 2023
3. *Southern California Analysis and Partial Differential Equations*, University of California at San Diego, San Diego, California, USA, November 2-3, 2019
4. *Instruments of Algebraic Geometry*, University of Bucharest, Faculty of Mathematics and Computer Science, September 17-22, 2017, Bucharest, Romania
5. *XIIIème Colloque Franco-Roumain de Mathématiques Appliquées*, "Alexandru Ioan Cuza" University of Iasi, Faculty of Mathematics, August 25-29, 2016

### Summer Schools and Workshops

1. *Oberwolfach Seminar: Free Boundary Problems in Fluid Dynamics*, Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach-Walke, Germany, October 23-29, 2022

2. *Shanks Workshop on Mathematical Aspects of Fluid Dynamics*, Vanderbilt University, Nashville, Tennessee, February 19-20, 2022
3. *Summer Program in Partial Differential Equations (Virtual Summer Graduate School)*, University of Texas at Austin, Austin, May 17-21, 2021 and May 24-28, 2021
4. *Introductory Workshop: Mathematical problems in fluid dynamics (Virtual Workshop)*, Mathematical Sciences Research Institute, Berkeley, January 25-February 05, 2021
5. *Connections Workshop: Mathematical problems in fluid dynamics (Virtual Workshop)*, Mathematical Sciences Research Institute, Berkeley, January 20-22, 2021
6. *Mathematical problems in fluid dynamics (Virtual Program)*, Mathematical Sciences Research Institute, Berkeley, January 19-May 28, 2021
7. *Introduction to water waves (Virtual Summer Graduate School)*, Mathematical Sciences Research Institute, Berkeley, July 27-August 07, 2020
8. *Sesiunea Nationala de Comunicari Stiintifice Studentesti de Matematica*, "Alexandru Ioan Cuza University" of Iasi, July 4-7, 2019
9. *Scuola Matematica Interuniversitaria*, Universita degli Studi di Perugia, Department of Mathematics and Computer Science, July 23-August 17, 2018, where I attended the "*Commutative Algebra and Geometry*" and "*Introduction to Mathematical Statistics*" courses
10. *Workshop for Young Researchers in Mathematics*, "Simion Stoilow" Institute of Mathematics of the Romanian Academy (IMAR), May 17-18, 2018
11. *Instruments of Algebraic Geometry*, University of Bucharest, Faculty of Mathematics and Computer Science, September 11-15, 2017, Bucharest, Romania
12. *Modern Mathematics Summer School*, Jacobs University, Bremen, Germany, July 1-11, 2017, where we were given introductory lectures in many fields of Mathematics, such as Representation Theory, Modular Forms, and Probability Theory

## Academic Services

- Referee for *Communications in Analysis and Geometry*
- Co-organizer of the UC Berkeley *Harmonic Analysis and Differential Equations Student Seminar (HADES)* (Fall 2023-Spring 2024)

## Selected Awards and Grants

### Awards

1. Silver Medal at the 57<sup>th</sup> *International Mathematical Olympiad*, July 6-16, 2016, Hong Kong

2. **First Prize** at the 24<sup>th</sup> *International Mathematics Competition for University Students*, July 31-August 7, 2017, Blagoevgrad, Bulgaria
3. **Silver Medal** at the 33<sup>rd</sup> *Balkan Mathematical Olympiad*, May 5-10, 2016, Tirana, Albania
4. **Gold Medal and Absolute Champion** at the *South Eastern European Mathematical Olympiad for University Students 2018*, February 27-March 4, 2018, Iasi, Romania
5. **Gold Medal** at *South Eastern European Mathematical Olympiad for University Students 2017*, February 28-March 5, 2017, Ohrid, Macedonia
6. **Bronze Medal** at the 8<sup>th</sup> *"Romanian Masters of Mathematics" International Competition*, February 24-29, 2016
7. **Silver Medal** at the 16<sup>th</sup> *Junior Balkan Mathematical Olympiad, June 25-29, 2012, Veria, Greece*
8. **Gold Medals** at the *Romanian National Mathematical Olympiad* in 2015 and 2016
9. **First Prize** at the *"Traian Lalescu" National Mathematical Competition for University Students*, May 5-7, 2017, Constanta, Romania

### Grants

*Fellowship for Young Researchers*, awarded by the Romanian Ministry of National Education, 2016-2018

### Teaching Experience

1. *Graduate Student Instructor*. Department of Mathematics, University of California at Berkeley, Berkeley, California, United States of America. Fall 2019-Fall 2021, Fall 2022.

### Internships

**February 4, 2017- September 4, 2017:** S.C. Gemini CAD Systems, Iasi

Project: CUDA Nesting (a topic in Computational Geometry regarding the irregular stock cutting problem), under the supervision of Mr. Radu Danciu (Software Development Manager)

### Miscellaneous

1. **Coordinator (grader)** at the *59th International Mathematical Olympiad*, Cluj-Napoca, Romania, July 9-14, 2018
2. **Member of the Central Committee (grader)** at the *National Mathematical Olympiad*, Timisoara, Romania, April 19-23, 2017

## **Other skills**

### **Languages**

Romanian (native), English (fluent), German (intermediate)

### **Computer skills**

Working knowledge of C++, MATLAB, Python, L<sup>A</sup>T<sub>E</sub>X, as well as familiarity with the Microsoft Office Suite