Ovidiu-Neculai Avadanei
Curriculum Vitae

Yale University-Department of
Mathematics
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Date of birth 01/19/1997

Appointments

July 2025-present: *Gibbs Assistant Professor*, Yale University, United States of America

Education

August 2019-May 2025: PhD in Mathematics, University of California at Berkeley, United States of America, GPA 4.0
Doctoral Advisor: Professor Daniel Tataru
October 2016-July 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. O. Avadanei, *Counterexamples to Strichartz estimates and gallery waves for the irrotational compressible Euler equation in a vacuum setting*, arXiv preprint, arXiv:2504.17932

2. A. Ai, O. Avadanei, *Low regularity well-posedness for the generalized surface quasi-geostrophic front equation*, arXiv preprint, arXiv:2311.07551, under revision at **Pure and applied analysis**

3. A. Ai, O. Avadanei, *Low regularity solutions for the surface quasi-geostrophic front equation*, arXiv preprint, arXiv:2310.20143

4. A. Ai, O. Avadanei, *Well-posedness for the surface quasi-geostrophic front equation*, **Nonlinearity**, Volume 37, Number 5, May 2024. The article can be found here.

5. A. Ai, O. Avadanei, *Well-posedness for the dispersive Hunter-Saxton equation*, **International Mathematics Research Notices**, Volume 2023, Issue 9, May 2023, Pages 7845-7882. The article can be found here.

Conferences, Workshops, Summer Schools, and Presentations

Contributed Talks

1. *Brown-Yale Analysis/PDE Seminar*, Brown University, Providence, Rhode Island, USA, October 25, 2025

2. *Conference on Mathematics of Wave Phenomena*, Karlsruhe Institute of Technology, Karlsruhe, Germany, February 24, 2025 (virtual talk)

3. *Workshop for Young Researchers in Mathematics*, "Alexandru Ioan Cuza" University of Iasi, Iasi, Romania, May 23, 2024

4. *Nonlinear Waves and Relativity Thematic Programme*, Erwin Schrödinger Institute, Vienna, Austria, May 14, 2024

5. *AMS Spring Central Sectional Meeting*, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin, USA, April 20-21, 2024

6. *Spring School on Soliton Dynamics*, Texas A&M University, College Station, Texas, USA, March 14-16, 2024

7. *The 19th Prairie Analysis Seminar*, Kansas State University, Manhattan, Kansas, USA, November 3-4, 2023

8. *Mathematical Problems in Fluid Dynamics, part 2*, Simons Laufer Mathematical Sciences Institute, Berkeley, California, USA, July 17-August 11, 2023

9. *The Tenth Congress of Romanian Mathematicians*, University, of Piteşti, Piteşti, Romania, June 30-July 5, 2023

10. *Shanks Workshop on Mathematical Aspects of Fluid Dynamics*, Vanderbilt University, Nashville, Tennessee, USA, February 19-20, 2022

Seminar Talks

1. *Analysis Seminar*, Yale University, New Haven, Connecticut, USA, April 28, 2025

2. *Analysis and PDE Seminar*, University of California at Berkeley, Berkeley, California, USA, April 21, 2025

3. *Analysis Seminar*, California Institute of Technology, Pasadena, California, USA, November 27, 2024

4. *USC Analysis and PDE Seminar*, University of Southern California, Los Angeles, California, USA, November 25, 2024

5. *Applied and Computational Mathematics Student Seminar*, University of South Carolina, Columbia, South Carolina, USA, November 11, 2024 (virtual talk)

6. ***Analysis Seminar***, Columbia University, New York, New York, USA, September 20, 2024

7. ***Analysis and PDE Seminar***, University of California at Los Angeles, Los Angeles, California, USA, April 30, 2024

8. ***Harmonic Analysis and PDE Student Seminar***, University of California at Berkeley, Berkeley, California, USA, September 19, 2023

9. ***Harmonic Analysis and PDE Student Seminar***, University of California at Berkeley, Berkeley, California, USA, March 7, 2023

10. ***PDE and Geometric Analysis Seminar***, University of Wisconsin-Madison, Madison, Wisconsin, USA, February 20, 2023

11. ***Harmonic Analysis and PDE Student Seminar***, UC Berkeley, Berkeley, California, USA, October 12, 2021

12. ***Graduate Student Working Group***, as part of the ***Mathematical problems in fluid dynamics***(**Virtual**) program, Mathematical Sciences Research Institute, Berkeley, California, May 5, 2021

13. ***Sesiunea Nationala de Comunicari Stiintifice Studentesti de Matematica***, "Alexandru Ioan Cuza" University of Iasi, Romania, July 4-7, 2019

Poster presentations

1. ***Rivière-Fabes Symposium on Analysis and PDE***, University of Minnesota-Twin Cities, Minneapolis, Minnesota, USA, April 25-27, 2025

Conferences attended as participant

1. ***3rd Simons Math Summer Workshop: Partial Differential Equations of Classical Physics***, Simons Center for Geometry and Physics, Stony Brook, New York, USA, July 10-18, 2025

2. ***Paris-Saclay conference in Analysis and PDE***, Laboratoire de Mathématiques d'Orsay, Orsay, France, May 27-31, 2024

3. ***Recent developments in wave turbulence theory***, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA, April 5-6, 2024

4. ***Advances in Nonlinear Analysis and Nonlinear Waves***, IHES, Le Bois-Marie, France, May 22-26, 2023

5. ***Southern California Analysis and Partial Differential Equations***, University of California at San Diego, San Diego, California, USA, November 2-3, 2019

6. ***Instruments of Algebraic Geometry***, University of Bucharest, Faculty of Mathematics and Computer Science, September 17-22, 2017, Bucharest, Romania

7. ***XIIIème Colloque Franco-Roumain de Mathématiques Apliquées***, "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 ***Inventiones Mathematicae*** and ***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. **Herb Alexander Prize for outstanding dissertation in Pure Mathematics**, 2024-2025

2. **Silver Medal** at the 57th *International Mathematical Olympiad*, July 6-16, 2016, Hong Kong

3. **First Prize** at the 24th *International Mathematics Competition for University Students*, July 31-August 7, 2017, Blagoevgrad, Bulgaria

4. **Silver Medal** at the 33rd *Balkan Mathematical Olympiad*, May 5-10, 2016, Tirana, Albania

5. **Gold Medal** and **Absolute Champion** at the *South Eastern European Mathematical Olympiad for University Students 2018*, February 27-March 4, 2018, Iasi, Romania

6. **Gold Medal** at *South Eastern European Mathematical Olympiad for University Students 2017*, February 28-March 5, 2017, Ohrid, Macedonia

7. **Bronze Medal** at the 8th *"Romanian Masters of Mathematics" International Competition*, February 24-29, 2016

8. **Silver Medal** at the 16th *Junior Balkan Mathematical Olympiad, June 25-29, 2012, Veria, Greece*

9. **Gold Medals** at the *Romanian National Mathematical Olympiad* in 2015 and 2016

10. **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, Spring 2024-Spring 2025.

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, LaTeX, as well as familiarity with the Microsoft Office Suite