

VASSILIOS GREGORIADES

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PERSONAL INFORMATION

Date and place of Birth: 2nd October 1981, Limassol, Cyprus.

Nationality and Citizenship: Greek.

Family status: Married with two children.

Languages: Greek (native),
English (full professional proficiency ILR scale),
German (professional working proficiency ILR scale),
French (able to read mathematical texts).

Research Interests: Descriptive Set Theory and applications in Analysis.

ACADEMIC DEGREES

TU Darmstadt October 2015

Habilitation in Mathematical Logic.

Thesis: *Descriptive Set Theory: advancements in effective theory and applications.*

Endorser: U. Kohlenbach.

University of Athens July 2009

Ph.D. in Analysis and Logic.

Thesis: *Effective Descriptive Set Theory and Applications in Analysis.*

Supervisors: Y. N. Moschovakis and A. Tsarpalias.

University of Athens February 2006

M.Sc. in Pure Mathematics.

Thesis: *Types of Convergence of Sequences of Functions and their connection with Topology* (in Greek).

Supervisor: N. Papanastassiou.

University of Athens July 2003

Bachelor in Mathematics.

ACADEMIC POSITIONS

National Technical University of Athens July 2020 - present day
Assistant Professor Greece

Department of Mathematics

School of Applied Mathematical and Physical Sciences

University of Turin May 2016 - April 2018
Associate Researcher - *Department of Mathematics* Italy

- *Grant holder: Fellowship 2020 researchers: TRAIN TO MOVE.*
Supported by the **European Commission** and the banking association **Compagnia di San Paolo**.
- Responsible for a research project.
- Management of funds for equipment and research visits abroad.

TU Darmstadt October 2009 - March 2016
Scientific Associate - *Department of Mathematics* Germany

- Offer of undergraduate courses in mathematics.
- Teaching Assistant in courses.
- Grading of examinations.
- Administrative duties and Management, including in every academic semester:
 - Hiring and organizing a team for teaching the exercise classes.
 - Organization of examinations
(supervision team assembly, directions, real-time problem handling).

- Management of student feedback (grades of homework assignment, admission to the examination, acquirement of bonuses).

SCIENTIFIC ARTICLES

Publications in peer-reviewed journals:

- Turing degrees in Polish spaces and decomposability of Borel functions (with *T. Kihara* and *K. M. Ng*). To appear in the **Journal of Mathematical Logic**.
- The Dyck and the Preiss Separation uniformly, **Annals of Pure and Applied Logic**, 169(10):1082 - 1116, 2018.
- Uniformity results on the Baire property, **Bulletin of the Hellenic Mathematical Society**, 62:1-18, 2018.
- A recursion theoretic characterization of the topological Vaught Conjecture in the Zermelo-Fraenkel set theory, **Mathematical Logic Quarterly**, 63(6):544-551, 2017.
- A comparison of concepts from computable analysis and effective descriptive set theory (with *T. Kispéter* and *A. Pauly*), **Mathematical Structures in Computer Science**, 27(8):1414-1436, 2017.
- Classes of Polish spaces under effective Borel isomorphism, **Memoirs of the American Mathematical Society**, 240(1135):vii+87, 2016.
- Choice free fixed point property, **Proceedings of the American Mathematical Society**, 143(5): 2143-2157, 2015.
- Turning Borel sets into Clopen sets effectively, **Fundamenta Mathematicae**, 219(2):119-143, 2012.
- The descriptive set-theoretic complexity of the set of points of continuity of a multi-valued function, **Logical Methods in Computer Science**, 7(4):22, 2011.
- A dichotomy result for a pointwise summable sequence of operators, **Annals of Pure and Applied Logic**, 160(2):154-162, 2009.
- The notion of exhaustiveness and Ascoli-type theorems (with *N. Papanastassiou*), **Topology and its Applications**, 155(10):1111-1128, 2008.
- A localization of Γ -measurability (with *N. Papanastassiou*), **Topology and its Applications**, 155(6): 497-502, 2008.

Submitted for publication in peer-reviewed journals:

- Intersections of ℓ^p spaces in the Borel hierarchy.

Drafts in preparation (ArXiv):

- On a question of Jaegers, pp. 13, <https://arxiv.org/abs/1905.09609>.

Monograph in preparation together with **Y. N. Moschovakis**:

- Notes on Effective Descriptive Set Theory, pp. 170+ (at the present time).

Articles and Extended Abstracts that were submitted to and accepted in conferences after peer-review:

- The Baire property holds in the projective hierarchy almost uniformly (abstract), **Twelfth International Conference on Computability and Complexity in Analysis**, 2015, Tokyo, Japan, (extended abstract, submission to give a talk).
- A comparison of concepts from computable analysis and effective descriptive set theory (with *T. Kispéter* and *A. Pauly*), **Continuity, Computability, Constructivity – From Logic to Algorithms MSCS Post Proceedings**, 2013, Swansea, UK, (Article E8, published in the conference proceedings).
- Effective refinements of classical theorems in descriptive set theory (informal presentation), **Proceedings of the Tenth International Conference on Computability and Complexity in Analysis**, 2013, Nancy, France, (extended abstract, submission to give a talk).
- Effective Theory on arbitrary Polish spaces (Extended Abstract), **Proceedings of the Eighth Panhellenic Logic Symposium**, 2011, Ioannina, Greece, (extended abstract, published in the conference proceedings).
- The descriptive set-theoretic complexity of the set of points of continuity of a multi-valued function, **Proceedings of the Seventh International Conference on Computability and Complexity in Analysis**, 2010, Zhenjiang, China, (Article E4, published in the conference proceedings).

Invited Submissions:

- Uniformity functions in descriptive set theory and their applications. (Contains joint results with T. Kihara and K. M. Ng.) Extended Abstract as an invited speaker (June 2018). **First Congress of Greek Mathematicians**, 2018, Athens, Greece. url: <http://fm.di.uoa.gr/>.
- Effective Theory on arbitrary Polish spaces. Abstract of invited talk. **Report from Dagstuhl Seminar 11411**, Volume 1, Issue 10, October 2011, p. 22.

TALKS AND PARTICIPATION IN CONFERENCES

Description:

- 20+ invited and 5+ contributing talks in scientific conferences or seminars in the U.S.A., Germany, France, Japan, Italy Greece, Portugal, Poland, and China.
- 15+ times participated in scientific conferences in the countries above.
- Including the **Dagstuhl Seminar: Computing with Infinite Data: Topological and Logical Foundations**, Dagstuhl, Germany, October 9-14, 2011.

Selected Invited Talks:

- Uniformity functions in descriptive set theory and their applications (in Greek). **First Congress of Greek Mathematicians**, Athens Greece, 27th June 2018.
- The Dyck and the Preiss Separation Uniformly. **Kurt Gödel Research Center**, University of Vienna, Austria, 16th March 2017.
- Kreisel compactness and hyperdegrees. **Logic Seminar**, Mathematics Sector **Caltech**, Los Angeles California U.S.A., 22th February 2017.
- The problem of HYP-isomorphism between recursive Polish spaces. **Cabal Seminar**, Mathematics Department, University of California Los Angeles (**UCLA**), U.S.A., 10th February 2017.
- Choices that we face: The good, the bad and the recursive. **13th Computability and Complexity in Analysis**, Faro, Portugal, 17th July 2016.
- Some uniformity aspects of the class of analytic sets. **Continuity, Computability, Constructivity - From Logic to Algorithms** Kochel, Germany, 18th September 2015.
- Hyperarithmetical incomparability and Kreisel compactness (in Greek). **10th Panhellenic Logic Symposium**, Carlovassi, Samos, Greece, 13th June 2015.

- Classes of Polish spaces under effective Borel isomorphism. **Set Theory: Forcing, Large Cardinals and Descriptive Set Theory**, Erwin Schrödinger Institute, University of Vienna, Austria, 1st October 2013.
- Effective theory on arbitrary Polish spaces. **Dagstuhl Seminar Computing with Infinite Data: Topological and Logical Foundations**, Dagstuhl, Germany, 13th October 2011.
- Applications of Logic in Analysis. **Joint Mathematics Meetings**, New Orleans, Louisiana, U.S.A., 7th January 2011.

RESEARCH VISITS

- Japan, **Mathematics in Computer Science Department - Computer Science School, Nagoya University** February 24 - March 18, 2018 (excluding March 4-8 due to participation in the conference: Second Workshop on Mathematical Logic and its Applications in Kanazawa).
- U.S.A., **Mathematics Department, University of California Los Angeles (UCLA)** November 2 - December 1, 2017.
- Austria, **Kurt Gödel Research Center, University of Vienna**, March 13 - 25, 2017.
- U.S.A., **Mathematics Sector, Caltech**, Los Angeles, February 2 - March 1, 2017.
- Cyprus, **Computer Science Department, University of Cyprus**, May 17 - 27, 2016 and August 17 - 27, 2016.
- Japan, **JAIST** (Japan Advanced Institute of Science and Technology) Nomi and **Mathematics Department, Ehime University**, Matsuyama, April 2 - 18, 2014.
- U.K., **Computer Laboratory, University of Cambridge**, October 7 - 12, 2013.

REVIEWS

- 15+ confidential reviews for publication in conference proceedings or scientific journals (peer-reviews). Including:
 - ◇ **Logic in Computer Science (LICS).**
 - ◇ **Transactions of the American Mathematical Society.**
 - ◇ **Proceedings of the American Mathematical Society.**
 - ◇ **Computability in Europe.**
 - ◇ **Annals of Pure and Applied Logic.**
 - ◇ **Archive for Mathematical Logic.**
- 10 published scientific reviews (*Math Reviews*) of published articles.

ORGANIZATION

Member of the Scientific Committee:

- 14th Conference in **Computability and Complexity in Analysis**, July 24-27, Daejeon, South Korea.
- 12th Panhellenic Logic Symposium, June 26-30, 2019, Anogeia, Crete, Greece.
- 11th Panhellenic Logic Symposium, July 12-16, 2017, Delphi, Greece.
- **PhDs in Logic VIII**, May 9-11, 2016, Darmstadt, Germany.

Local Organizer:

- **Descriptive Set Theory in Turin**, September 6-8, 2017, Turin, Italy.
- 11th Conference in **Computability and Complexity in Analysis**, July 21 - 24, 2014, Darmstadt, Germany.

TEACHING IN DETAIL

Lecturer

Mathematics Department TU Darmstadt

- Proseminar (English); Winter Semester 2015/2016.
- Analysis II (English); Summer Semester 2015.
- Introduction to Descriptive Set Theory (English); Winter Semester 2012/2013.

Teaching Assistant

Mathematics Department TU Darmstadt
October 2009 – March 2016

- Analysis I (English and German), 4 semesters.
- Analysis II (English and German), 6 semesters.
- Complex Analysis (English), 1/2 semester.
- Ordinary Differential Equations (Gewöhnliche Differentialgleichungen) (German), 1/2 semester.
- Measure and Integration theory (Integrationstheorie I, Integrationstheorie II) (German), 1 semester.
- Basic Applied Proof Theory (English), 1 semester.

Assistant as a Ph.D. student

University of Athens - Computer Science Department
Winter Semester 2008-2009

- Support of the Lecture and Teaching Exercise Classes in the Course D5 - Analysis I.

SKILLS

- Organizational and Communication skills, Team Management, Data Management.
- Problem solving.
- Preparation of proposals and reports, Scientific evaluation of research.
- Computer skills:
 - Experience with *Linux* and *Windows*.
 - Basic programming with *Python*.
 - Typing skills (English and Greek).