Aasaimani Thamizhazhagan

🌐 Personal Homepage ✉ fmanimic@gmail.com, aasaimanit@pondiuni.ac.in 🏴 Indian
🏛 M 05, Ramanujan School of Mathematical Sciences, Pondicherry University, Kalapet, Pondicherry - 605 014.

Academic Position(s)

Pondicherry University • Kalapet, Pondicherry, India   Oct 2024 – Present
Guest Faculty • *Department of Mathematics*

University of Waterloo • Waterloo, ON, Canada   Sept 2022 – May 2024
Postdoctoral Fellow and Sessional Instructor • *Department of Pure Mathematics*
Worked with: Dr. Nico Spronk, Dr. Brian E. Forrest

Conestoga College • Kitchener, ON, Canada   Aug 2023 – Jan 2024
Part-time Faculty • School of Business

University of Winnipeg • Winnipeg, MB, Canada   Sept 2021 – Aug 2022
Postdoctoral Fellow and Contract Academic Staff • *Department of Mathematics and Statistics*
Worked with : Dr. Ross Stokke, Dr. Matthew Wiersma
Funding: Joint support from grants held by the host researchers, Dr. Yong Zhang, and Dr. Fereidoun Ghahramani

Education

University of Waterloo • Waterloo, ON, Canada   Sep 2016 – Aug 2021
Doctor of Philosophy • *Pure Mathematics*
Thesis - On the structure of invertible elements in certain Fourier-Stieltjes algebras
Advisors: Dr. Nico Spronk, Dr. Brian E. Forrest

National Institute of Science Education and Research (NISER) • Odisha, India   July 2011 – May 2016
Integrated Masters of Science • *Mathematics*
Thesis - Fourier algebras, amenability and its relations with representation theory
Advisor: Dr. Dr. Varadharajan Muruganandam

Teaching and Research Interests

Teaching: Mathematical proofs, single- and multi-variable calculus, linear algebra, real analysis, complex analysis, functional analysis, measure theory and Lebesgue integration, harmonic analysis, topology, and group theory.
Research: *Functional analysis and its intersection with group theory.*
Abstract harmonic analysis, representation theory of locally compact groups, Banach algebras, operator algebras and operator space theory.

Publications

1. (with Brian E. Forrest and John Sawatzky) *Arens regularity of ideals in $A(G)$, $A_{cb}(G)$ and $A_M(G)$*
   Journal of the Iranian Mathematical Society 4 (2023), no. 1, 5–25.

2. (with Brian E. Forrest and John Sawatzky) *Invariant subspaces in the dual of $A_{cb}(G)$ and $A_M(G)$*
   Annals of Mathematical Sciences and Applications 8 (2023), no.2, 239—267.

3. On the structure of invertible elements in certain Fourier-Stieltjes algebras
   Studia Mathematica, 257 (2021), no. 3, 347–360.

Works in progress

1. *Semisimplicity of the second dual of $A_{cb}(G)$ and $A_M(G)$ and weak-amenability of certain ideals in them* (with Brian E. Forrest and John Sawatzky)

2. *Homomorphisms of Spine Algebras* (with Nico Spronk and Ross Stokke)

3. *Local Fell Groups* (with Nico Spronk and Aleksa Vujičić)

Invited Research Talks:

- **Homomorphisms of Spine Algebras**
  Mathematics Seminar, Institute of Mathematical Sciences, Chennai   Jan 9, 2026
  Workshop on Commutative and Non-commutative Harmonic Analysis, NISER, Bhubaneswar   Mar 7, 2026

- **On the structure of invertible elements in certain Fourier-Stieltjes Algebra**
  Canadian Abstract Harmonic Analysis Symposium, Banff International Research Station   June 19, 2022

  Department Seminar Series, University of Winnipeg   Sep 24, 2021

  Groups, Operators, and Banach Algebras Webinar, Online   Aug 18, 2020

  Analysis Seminar in Pure Mathematics, University of Waterloo   Sep 18, 2019

INVITED COLLOQUIUA:

- **On the interplay of harmonic analysis, combinatorics, additive number theory, and ergodic theory**
  Joint PM/CO Grad Colloquium, University of Waterloo   Dec 3, 2020

- **Uncertainty principles and Fourier analysis**
  Grad Student Colloquium, University of Waterloo   Nov 27, 2018

CONTRIBUTED TALKS:

- **Homomorphisms of Spine Algebras**
  19th Discussion Meeting in Harmonic Analysis, IISER Mohali   Dec 16, 2025

- **On the structure of invertible elements in certain Fourier-Stieltjes Algebra**
  National Seminar on Algebra and Graph Theory, Pondicherry University   Feb 22, 2025

- **Invariant subspaces in the Dual of $A_{cb}(G)$ and $A_M(G)$**
  CAHAS 2023, University of St. Boniface   June 15, 2023

- **On the structure of invertible elements in certain Fourier-Stieltjes Algebra**
  Virtual Math Fest, Institute of Mathematical Sciences, Chennai (Online)   July 24, 2020

  Banach Algebras and Applications, University of Manitoba   July 18, 2019

  Grad Seminar in Pure Mathematics, University of Waterloo   May 15, 2019

PRESENTATIONS:

- **Analytic discs in the maximal ideal space of H^∞**
  Grad course talks on Hardy spaces, University of Waterloo   Dec, 2017

- **Perturbations of approximately finite-dimensional C^*-algebras**
  Grad course talks on K-theory of C^*-algebras, University of Waterloo   April, 2017

- **Amenability and its relation with representation theory**
  Term Presentation, National Institute of Science Education and Research   Dec, 2015

CONFERENCES/WORKSHOPS/SEMINARS PARTICIPATION

- Workshop on Commutative and Non-commutative Harmonic Analysis, NISER Bhubaneswar   Mar 2–7, 2026

- 19th Discussion Meeting in Harmonic Analysis, IISER Mohali   Dec 16–19, 2025

- International Conference on Special Functions & Applications (ICSFA-2025)
  Pondicherry University, Puducherry   Nov 20–22, 2025

- National Workshop on Python for Scientific Computing and Applications (PSCA-2025)
  Maulana Azad National Institute of Technology (MANIT), Bhopal (Online)   June 16–20, 2025

- National Seminar on Algebra and Graph Theory, Pondicherry University, Puducherry   Feb 19–22, 2025

- Canadian Abstract Harmonic Analysis Symposium(CAHAS),
  University of St. Boniface, Winnipeg   June 15–16, 2023

- A Celebration of Great Math Education Initiatives, FYMSiC Online Meet Up   Feb 28, 2023

- Canadian Abstract Harmonic Analysis Symposium(CAHAS) 2020, BIRS, Banff   June 17–19, 2022

- Virtual Math Fest, Institute of Mathematical Sciences, Chennai (Online)   July 20–26, 2020

- Canadian Operator Symposium (COSy), Fields Institute, Online   May 25–29, 2020

- Banach Algebras and Applications, University of Manitoba, Winnepeg   July 11–18, 2019

- Canadian Abstract Harmonic Analysis Symposium(CAHAS),
  Carleton University, Ottawa   May 31–June 2, 2018

- [Canadian Abstract Harmonic Analysis Symposium(CAHAS),](#)
  University of Manitoba, Winnepeg   May 23–25, 2017
- [Canadian Operator Symposium(COSy),](#) Lakehead University, Thunder Bay   May 29–June 2, 2017
- *Workshop on Fourier and signal analysis by G. B. Folland*, NISER, Bhubaneswar   Dec 2015

TEACHING EXPERIENCE

Pondicherry University, Ramanujam School of Mathematical Sciences
Instructor/Sole Instructor

- *Mathematical Modeling (BSMT 331)* (Sole Instructor) - Int. M.Sc. (Math)   Even 25-26
- *Mathematics I for Engineers (BTMT 171)*   Odd 2024-25, 25-26
- *Mathematics II for Engineers (BTMT 172)*   Even 2024-25, 25-26
  ECE, CSE, ENE; $\sim$ 120 students

  Topics: linear algebra, ODEs, multivariable calculus, PDEs, Laplace and Fourier transforms. Coordinated syllabi, assessments, and examinations across multiple engineering cohorts.

University of Waterloo, Faculty of Mathematics
Instructor/Sole Instructor

- *Advanced Calculus II for Electrical Engineers (ECE 206/MATH 212)* (Sole Instructor)   Fall 2023
  Multivariable and vector calculus; complex variables (Möbius-based curriculum).
- *Calculus I for Honours Mathematics (MATH 137)*   Fall 2022
- *Calculus for Engineering (MATH 116)*   Fall 2019

University of Winnipeg, Department of Mathematics & Statistics
Instructor/Sole Instructor

- *Complex Analysis (MATH 4101)* (Sole Instructor)   Winter 2022
- *Applied Mathematics for Business & Administration (MATH 1301)*   Fall 2021

Conestoga College, School of Business
Instructor

- *Business Mathematics (MATH 71775)*

University of Waterloo, Department of Pure Mathematics
Graduate Teaching Assistant   2016-2021

- Tutorials and grading for calculus and linear algebra
- Academic support for upper-year analysis courses: real analysis, measure theory, Fourier analysis, complex analysis.

PROFESSIONAL/ACADEMIC DEVELOPMENT

CSIR-UGC NET Coach for Math Majors – Professional Service   May 2025 – Present
Pondicherry University, Equal Opportunity Cell

- Provided personalised coaching to undergraduate and postgraduate students, focusing on conceptual clarity, problem-solving strategies, and exam readiness for CSIR-UGC NET-mathematics subject.

Teaching and Curriculum Development Training –Micro-credentials   Summer 2023
Conestoga College,Teaching and Learning Department

- Completed certified micro-credentials in outcomes-based education, active learning, assessment design, and curriculum alignment.

Graduate Student Instructor Training Seminar   Winter 2019
University of Waterloo, Faculty of Mathematics

- Participated in interactive teaching workshops with peer feedback on lesson plans and course materials.
- Attended math-specific sessions on lesson planning, assessment design, student motivation, and lecture delivery.
- Designed and presented three mini-lectures in real analysis and observed multiple classroom teaching sessions.

Learning Seminars   Fall 2016 – Summer 2024
University of Waterloo, Department of Pure Mathematics

- Contributed to and participated in research seminars in operator algebras, harmonic analysis and representation theory, including Banach algebras associated with locally compact groups, C^*-algebras, and tensor categories.

- Regular attendee departmental analysis seminars, graduate colloquia, and graduate seminars.
- Supervision of undergraduate research assistants

Awards and Honours

Received at University of Waterloo, Waterloo, ON, Canada

- International Doctoral Student Award   Fall 2016 – Spring 2020

- Susan and Janoes Aczel Graduate Scholarship   Winter 2018 – 2020 and Fall 2018

Received at National Institute of Science Education and Research, Odisha, India

- INSPIRE Fellowship   July 2011 – May 2016

- Summer Research Fellowship, Indian Academy of Sciences, Bangalore, India   Summer 2013

- Cleared CSIR-UGC-NET for JRF with rank 33   June 2016

Academic References

Dr. Varadharajan Muruganandam (Professor) (Retd. from NISER)	Department of Mathematics IIT Palakkad, Palakkad, Kerala, India - 678557 ✉ vmuruganandam@iitpkd.ac.in
Dr. Brian E. Forrest (Professor (Retd.)) (for Teaching and Research)	Department of Pure Mathematics University of Waterloo, Canada ✉ beforres@uwaterloo.ca, ☏ +1 (519) 888-4567 ext. 35569
Dr. Nico Spronk (Professor)	Department of Pure Mathematics University of Waterloo, Canada ✉ nspronk@uwaterloo.ca, ☏ +1 (519) 888-4567 ext. 35559
Dr. Ross Stokke (Professor)	Department of Mathematics and Statistics University of Winnipeg, Canada ✉ r.stokke@uwinnipeg.ca, ☏ +1 (204) 786-9375
Dr. Volker Runde (Professor)	Department of Mathematical and Statistical Sciences University of Alberta, Canada ✉ vrunde@ualberta.ca
Dr. Matthew Kennedy (Professor)	Department of Pure Mathematics University of Waterloo, Canada ✉ matt.kennedy@uwaterloo.ca, ☏ +1 (519) 888-4567 ext. 41346