Dr. Arun A

Address	:	Anilalayam, Edakkad P.O., Kollam Dist., Kerala, India-691552.
Contact Number	:	+91 9567902347
Email	:	arunanil93@gmail.com
Qualifications	:	M.Sc., M.Phil., Ph.D., Post. Doc., JRF.

Educational Qualifications

September 2022 — **Doctor of Philosophy** *in* Mathematics *from*
University of Kerala, Thiruvananthapuram, Kerala, India.

Title: STUDIES ON SOME GRAPH FAMILIES WHICH ARE COVER-INCOMPARABILITY GRAPHS AND THEIR POSETS

Guide : Dr. Manoj Changat, Senior Professor(Rtd.),
Department of Futures Studies, University of Kerala, Kerala, India.

https://shodhganga.inflibnet.ac.in/handle/10603/424073

November 2016 — **Master of Philosophy** *in* Futures Studies *from*
University of Kerala, Thiruvananthapuram, Kerala, India.

(*Equivalent to Master of Philosophy in* Mathematics)

Dissertation:"Coloring and Domination problems on Cover-Incomparability graphs".
Grade: A

April 2015 — **Master of Science** *in* Mathematics *from*
Cochin University of Science and Technology (CUSAT), Kochi, Kerala, India.
Cgpa: 6.47/10 Percentage: 59.7% Division: Second Class

April 2013 — **Bachelor of Science** *in* Mathematics *from*
University of Kerala, Thiruvananthapuram, Kerala, India.
Grade: B+ Cgpa: 3.41/4 Percentage: 85%

Research Experience

15 May 2023 to 14 May 2025 — **Post Doctoral Fellow** in Mathematics at University of Kerala

20 June 2024 *to* 12 July 2024	**Visiting Researcher** at the Interdisciplinary Centre for Bioinformatics, University of Leipzig, Germany, as a part of the bilateral project "Bubbles and Directed Transit Functions: Structures and Algorithms" Funded by DST, Govt. of India and DAAD, Germany.

Teaching Experience

16 June 2025 to 31 March 2026	**Guest Lecturer** in Mathematics at T.K.M. College of Arts and Science, Kollam, Kerala. (Affiliated to University of Kerala).
1 July 2026 to 18 August 2026	**Guest Lecturer** in Mathematics at T.K.M. College of Arts and Science, Kollam, Kerala. (Affiliated to University of Kerala).
19 August 2026 to Current	**Assistant Professor** Department of Mathematics, Sree Narayana College, Punalur, Kollam Dist., Kerala- 691305. (Affiliated to University of Kerala).

Fellowship

Dec. 2017 JRF(NET)-UGC, Mathematical Sciences,
Conducted by Council of Scientific & Industrial Research (CSIR)
Govt. of India.

Areas of Interest

Discrete Mathematics - Graph Classes, Graph Algorithms,
Graph Convexity, Partially Ordered Set.

List of Publications

Published

[1] Bijo S. Anand, **Arun Anil**, Manoj Changat, Mitre C. Dourado, Sabeer S. Ramla : **Computing the hull number in $\triangle$-convexity**. *Theoretical Computer Science* 844, 217–226(2020).
https://doi.org/10.1016/j.tcs.2020.08.024
(Elsevier, SCI Journal, Q_2-Journal, ISSN: 0304-3975).

[2] **Arun Anil**, Manoj Changat, Tanja Gologranc, Baiju Sukumaran : **Ptolemaic and planar cover-incomparability graphs**. *Order* 38, 421–439(2021).

https://doi.org/10.1007/s11083-021-09549-4
(Springer, SCI Journal, Q_3-Journal, ISSN: 0167-8094).

[3] **Arun Anil**, Manoj Changat : **Ptolemaic and Chordal Cover-Incomparability Graphs**. *Order* 39, 29–43 (2022).
https://doi.org/10.1007/s11083-021-09551-w
(Springer, SCI Journal, Q_3-Journal, ISSN: 0167-8094).

[4] **Arun Anil**, Manoj Changat : **Comparability Graphs Among Cover-Incomparability Graphs**. N. Balachandran and R. Inkulu (Eds.): CALDAM 2022, *Algorithms and Discrete Applied Mathematics, LNCS* 13179, pp. 48–61, Springer, Cham (2022).
https://doi.org/10.1007/978-3-030-95018-7_5
(Springer, Scopus Indexed Journal, Q_3-Journal, ISSN: 0302-9743)

[5] **Arun Anil**, Manoj Changat : **Composition and Product of Cover-Incomparability Graphs**. *The Art of Discrete and Applied Mathematics* 6, #P2.09 (2023).
https://doi.org/10.26493/2590-9770.1515.af9
(Scopus Indexed Journal, Q_2-Journal, ISSN: 2590-9770)

[6] **Arun Anil**, Manoj Changat : **Recognition of chordal graphs and cographs which are Cover-Incomparability graphs**. *Discrete Mathematics & Theoretical Computer Science* 26(3), #12(2024).
https://doi.org/10.46298/dmtcs.11657
(EPIsciences, SCI Journal, Q_1-Journal, ISSN: 1365-8050).

[7] Bijo S. Anand, **Arun Anil**, Manoj Changat, Revathy S. Nair, Prasanth G Narasimha-Shenoi : **Helly Number, Radon Number and Rank in Δ- Convexity on Graphs.** Daya Gaur and Rogers Mathew (Eds.): CALDAM 2025, *Algorithms and Discrete Applied Mathematics, LNCS* 15536, pp. 292–306, Springer, Cham (2025).
https://doi.org/10.1007/978-3-031-83438-7_25
(Springer, Scopus Indexed Journal, Q_3-Journal, ISSN: 0302-9743)

[8] **Arun Anil**, Manoj Changat, John J. Chavara, Lekshmi Kamal K-Sheela, Prasanth G. Narasimha-Shenoi, Bruno J. Schmidt, Ameera Vaheeda Shanavas, Peter F. Stadler : **Directed Transit Functions**. *Results in Mathematics* 80(2), p.45 (2025)
https://doi.org/10.1007/s00025-025-02354-0
(Springer, SCI Journal, Q_1-Journal, ISSN: 1422-6383).

[9] Bijo S. Anand, **Arun Anil**, Manoj Changat, Prasanth G Narasimha-Shenoi, Sabeer S. Ramla : **Carathèodory Number and Exchange Number in Δ-convexity**. *Journal of Combinatorial Mathematics and Combinatorial Computing* 126, 11-27(2025).
https://doi.org/10.61091/jcmcc126-02.
(Scopus Indexed Journal, Q_4-Journal, ISSN: 0835–3026)

[10] Sreekumar Sreedharan, **Arun Anil** : **Tolerant Radon partitions of induced path**

convexity in graphs. *Asian-European Journal of Mathematics* 2540013(2025). https://doi.org/10.1142/S1793557125400133
(World Scientific, Scopus Indexed Journal, Q_3-Journal, ISSN: 1793–5571)

[11] Abdultamim Ahadi, **Arun Anil**, Manoj Changat: **Hierarchy of Subfamilies of Ptolemaic Graphs: Axiomatic Characterizations and Interval Functions**. *Communications in Combinatorics and Optimization*. (Accepted, May 2025). https://doi.org/10.22049/cco.2025.30144.2335
(Scopus Indexed Journal, Q_1-Journal, ISSN: 2538–2128)

[12] **Arun Anil**, Manoj Changat, Tanja Dravec, Jeny Jacob, Lekshmi Kamal K.Sheela, Iztok Peterin, Polona Repolusk, Rishi Ranjan Singh : **On the stress transit function**. *Bulletin of the Iranian Mathematical Society 52, 6 (2026)*. https://doi.org/10.1007/s41980-025-01017-8
(Springer, SCI Journal, Q_3-Journal, ISSN: 1735-8515).

Communicated

[1] **Arun Anil**, Manoj Changat, Lekshmi Kamal K-Sheela, Prasanth G. Narasimha-Shenoi, Bruno J. Schmidt, Peter F. Stadler : **Directed Interval Transit Functions**. (*Submitted, March 2025 (Under Review)*).

[2] Revathy S. Nair, Bijo S. Anand, **Arun Anil**, Manoj Changat, Prasanth G Narasimha-Shenoi, Julliano R. Nascimento : **On the Helly Number, Radon Number and Rank in Δ- Convexity: Structural and Complexity Results on Graphs.** (*Submitted, August 2025 (Under Review)*).

List of Presentations

[1] Presented a paper entitled **Cover-Incomparability graphs and some well-known graph parameters** in the *International Conference on Innovations in Graphs and its Alliances in Digital Era-2020 (ICIGA-2020)* during January 22-24, 2020 organized by Department of Mathematics, University of Kerala.

[2] Presented a paper entitled **Ptolemaic Cover-Incomparability graphs** in the *International Conference on Graph Connections (ICGC 2020)* online during August 6-8, 2020 organized by Department of Mathematics and Statistics and IQAC, B.C.M. College, Kottayam in association with M. G. University, Kottayam.

[3] Presented a paper entitled **Comparability graphs which are cover-incomparability graphs** in the *International Conference on Number Theory and Discrete Mathematics (ICNTDM-2020)* during December 11-14, 2020 organized by Ramanujan Mathematical Society and hosted by Rajagiri School of Engineering & Technology, Kochi.

[4] Presented a paper entitled **Classical Graph-Theoretic Parameters of Cover- Incomparability Graphs** in the *International Conference on Graphs, Combinatorics and Optimization (ICGCO)* during February 6-8, 2022 Organized by BITS Pilani, Dubai Campus.

[5] Presented a paper entitled **Comparability Graphs Among Cover-Incomparability Graphs** in the 8th International Conference on Algorithms and Discrete and Applied Mathematics (CALDAM-2022) held during February 10-12, 2022 in the Department of Mathematics, Pondicherry University, Puducherry.

[6] Presented a paper entitled **Recognition of chordal graphs which are cover-incomparability graphs** in the International Conference on Algebra and Discrete Mathematics (ICADM-2024) held during February 20-22, 2024 in the Department of Mathematics, Government College Kattappana, Idukki, Kerala.

Dr. Arun A