Chandra N. Sekharan, Ph.D.

PROFESSOR OF COMPUTER SCIENCE

Department of Computer Science · College of Engineering and Computer Science
Texas A&M University–Corpus Christi · Corpus Christi, TX 78412

CURRICULUM VITAE · NOVEMBER 2026

EDUCATION

Ph.D., Mathematical Sciences, Clemson University, South Carolina — 1986 – 1989
Dissertation: "Parallel Algorithms and Enumeration Techniques for Partial *k*-Trees"

M.S., Computer Science, School of Computer Science and Automation, Indian Institute of Science, India — 1983 – 1985

Ph.D. Scholar, Department of Computer Science, Indian Institute of Technology, Mumbai, India — 1982 – 1983

B.S., Electrical Engineering and Electronics, Indian Institute of Science, India — 1979 – 1982

ACADEMIC AND ADMINISTRATIVE APPOINTMENTS

TEXAS A&M UNIVERSITY–CORPUS CHRISTI

Ph.D. Computer Science Program Coordinator — Fall 2026 – present

Professor, Department of Computer Science — Jan 2022 – present

Professor and Chair, Department of Computing Sciences / Computer Science — Jan 2022 – Aug 2024

- Led 23 full-time faculty (13 tenure-track, 10 non-tenure-track), 5 adjunct faculty, and 2 administrative staff.
- Oversight of B.S. and M.S. in Computer Science, B.S. Geospatial Science, M.S. Geospatial Systems Engineering, and Ph.D. in Computer Science.

LOYOLA UNIVERSITY CHICAGO

Professor and Chair, Department of Computer Science — Jul 2018 – Dec 2021

- 25 faculty and 3 staff; oversight of 8 undergraduate programs, 4 graduate programs, 3 graduate certificates, and 2 minors.
- Led 11 tenure-line faculty, 4 clinical faculty, and 10 adjunct faculty in teaching, research, and service.
- Programs in computer science, information technology, cybersecurity, software engineering, data science, bioinformatics, physics & computer science, and mathematics & computer science.
- Highest new extramural research funding in the College (NIH, NSF, DoD, NSA).
- Budget, alumni relations, strategic and facilities planning, hiring, annual evaluation, enrollment management, curriculum, tenure and promotion, and faculty/staff development.
- Industry and corporate partnerships for internships, mentoring, and fundraising.

Professor, Department of Computer Science — 2002 – 2021

Assistant to the Provost — led two university-wide initiatives (summer online classes and January term) to improve student access and retention — Jul 2010 – Jun 2012

Fellow, American Council on Education — University of Wisconsin–Stout, University of Wisconsin System Administration (Madison), and Northeastern Illinois University; focus on strategic planning, university–industry partnerships, budgeting and finance, enrollment management, board relations, and government relations — 2009 – 2010

Chairperson, Department of Computer Science — Fall 2005 – Spring 2012

Associate Professor, Department of Computer Science (tenured 1995) — 1995 – 2001

Assistant Professor, Department of Mathematics and Computer Science — 1993 – 1995

UNIVERSITY OF CENTRAL FLORIDA

Assistant Professor, Center for Parallel Computation, Department of Computer Science — 1989 – 1993

HONORS AND AWARDS

2026	Invited Speaker, 5th Annual AI/ML in Pediatric Research Symposium, Johns Hopkins All Children's Hospital, St. Petersburg, FL
2025	ABET Computing Accreditation Commission Service Plaque
2020	IEEE Senior Member
2010	Fellow, American Council on Education
2002, 2003	Summer Faculty Research Program, US Army Research Laboratories
1999	Nominated for Graduate Faculty of the Year, Loyola University Chicago
1993	Who's Who of Young Professionals
1992	Who's Who of the South and Southwest
1989	Commendation for Excellent Performance in Doctoral Studies

RESEARCH GRANTS AND FUNDING

FUNDED

2026	"MS Bridge Program — Data Grant," Northeastern University, **$3,000** (PI).
2024 – 2026	"MS Bridge Program — Educational Funding," Northeastern University, **$55,000** (PI; Co-PI: A. Hadimlioglu).
2023 – 2027	"Collaborative Research: CISE-MSI: DP: CNS: Adaptive Multi-Tiered, Multi-Task Base Station Infrastructure for Communication-Denied Environments," NSF CISE MSI, Award #2318725, **$352,360** (Co-PI; PI: M. Sookhak).
2023 – 2024	"Large Language Models for Autonomous Systems," Microsoft Accelerate AI — Azure Cloud Services Grant, **$20,000** in cloud credits (PI).
2008 – 2014	"ExCEL: Excellence in Computing at Every Level," NSF Division of Undergraduate Education, **$600,000** (Co-PI).
2007	"Allston Scholarships in Computer Science," Allston Trading LLC, **$12,500**.
2005	"Research Education for Undergraduates in CITEP," NSF Supplemental Grant, **$8,000** (Co-PI).
2002 – 2005	"Community Information Technology Entrepreneurship Project" (open-source accounting software), NSF, **$1,000,000** (Co-PI).

2002 – 2005 "Routing on High-Performance Networks using Active Monitoring of Network Parameters," NSF High Performance Network Connectivity, **$150,000** (Co-PI).

2003 "High Performance Computing in Bioinformatics," DARPA, **$3,000,000** (Project Personnel).

1998 – 2000 "Concurrency and Interactivity," Sun Microsystems Inc. hardware grant, **$90,000** (with Colby, Jagadeesan, Dordal, and Läufer).

1996 Oracle software grant, software valued at **$900,000**.

— Microsoft software grant, software valued at **$68,000** (with Läufer and Jagadeesan).

1993 – 1995 "Battlefield Simulation on a Massively Parallel Computer," SAIC (US Army subcontractor), **$56,000** (PI).

1992 – 1993 "Parallel Computation in the Undergraduate Computer Science Curriculum," NSF, **$560,000** (Co-PI, with Guha et al.).

1991 – 1994 "Outstanding Issues in the Design of Parallel Algorithms for Partial *k*-Trees," NSF, **$36,000** (PI).

PROPOSALS SUBMITTED (NOT FUNDED)

2026 "TexCOAST-Risk: Geospatial Risk Atlas, Visualization, and Decision Support for Texas Coastal Orphaned and Idled Wells," NASEM Gulf Research Program (PI; Co-PIs: T. Chu, T. Kalb).

2025 "A Novel AI Framework for Evidence-Based Mental Health Care," CAHSI (PI; with A. Beltran Verdugo, California State University).

2025 "Design and Implementation of a Pipeline Incident Data Repository, Standardization, and Analysis for Enhanced Safety and Research Prioritization," Pipeline Research Council International (Co-PI; PI: D. Um).

PUBLICATIONS

Name in bold; student co-authors as reported in annual reviews. Accepted papers listed with their scheduled publication date.

JOURNAL ARTICLES

J32 **C. N. Sekharan**, G. K. Thiruvathukal, "Now's the Time: Computer Science Must Evolve to Emphasize Software and Systems Engineering with AI," *IEEE Computer*, 59(8), pp. 117–121, Aug. 2026.

J31 A. Phadke, F. A. Medrano, T. Chu, **C. N. Sekharan**, M. J. Starek, "Modeling Wind and Obstacle Disturbances for Effective Performance Observations and Analysis of Resilience in UAV Swarms," *Aerospace* (MDPI), 11(3), 237, 2024.

J30 A. Phadke, F. A. Medrano, **C. N. Sekharan**, T. Chu, "An Analysis of Trends in UAV Swarm Implementations in Current Research: Simulation versus Hardware," *Drone Systems and Applications*, 12, pp. 1–10, Feb. 2024.

J29 A. Phadke, F. A. Medrano, **C. N. Sekharan**, T. Chu, "Designing UAV Swarm Experiments: A Simulator Selection and Experiment Design Process," *Sensors*, 23(17), 7359, 2023.

J28 M. Nelson, S. Radhakrishnan, **C. N. Sekharan**, A. Chatterjee, S. G. Krishna, "Queryable Compression on Time-Evolving Web and Social Networks with Streaming," *ACM Transactions on the Web*, 16(2), Article 6, pp. 1–21, 2022.

J27 S. Radhakrishnan, S. M. Banik, V. Sarangan, **C. N. Sekharan**, "Delay Constrained Subtree Homeomorphism Problem with Applications," *IEEE Transactions on Parallel and Distributed Systems*, 22(12), pp. 1978–1985, Dec. 2011.

J26 **C. N. Sekharan**, S. M. Banik, S. Radhakrishnan, "On the Heterogeneous Postal Delivery Model for Multicasting," *Journal of Communications and Networks*, 13(5), pp. 536–543, Oct. 2011.

J25 S. M. Banik, S. Radhakrishnan, V. Sarangan, **C. N. Sekharan**, "Implementation of Distributed Floor Control Protocols on Overlay Networks," *IEEE Transactions on Parallel and Distributed Systems*, 19(8), pp. 1057–1070, 2008.

J24 S. M. Banik, S. Radhakrishnan, **C. N. Sekharan**, "Multicast Routing with Delay and Delay Variation Constraints for Collaborative Applications on Overlay Networks," *IEEE Transactions on Parallel and Distributed Systems*, 18(3), pp. 421–431, Mar. 2007.

J23 G. Racherla, S. Radhakrishnan, **C. N. Sekharan**, "Performance Evaluation of Wireless TCP with Rerouting in Mobile Networks," *Computer Communications*, 26(6), pp. 542–551, 2003.

J22 S. Radhakrishnan, G. Racherla, **C. N. Sekharan**, N. S. V. Rao, S. G. Batsell, "Protocol for Dynamic Ad-Hoc Networks Using Distributed Spanning Trees," *Wireless Networks*, 9(6), pp. 673–686, 2003.

J21 J. G. Del Greco, **C. N. Sekharan**, R. Sridhar, "Fast Parallel Reordering and Isomorphism Testing of *k*-Trees," *Algorithmica*, 32(1), pp. 61–72, Springer-Verlag, 2002.

J20 D. Z. Chen, D. T. Lee, R. Sridhar, **C. N. Sekharan**, "Solving the All-Pair Shortest Path Query Problem on Interval and Circular-Arc Graphs," *Networks*, 31(4), pp. 249–258, July 1998.

J19 K. Han, **C. N. Sekharan**, R. Sridhar, "Unified All-Pairs Shortest Path Algorithms in the Chordal Hierarchy," *Discrete Applied Mathematics*, 77, pp. 59–71, 1997.

J18 **C. N. Sekharan**, J. G. Del Greco, S. Rathi, "Space-Time Trade-offs in the Relative Unranking of Binary Trees," *The Computer Journal*, 39(1), pp. 36–44, 1996.

J17 **C. N. Sekharan**, Z.-H. Ma, U. B. Vemulapati, W. J. Porthouse Jr., A. T. Irwin, "MasPaWS — A Massively Parallel War Simulator," *Simulation Practice and Theory*, 4(4), pp. 265–282, 1996.

J16 **C. N. Sekharan**, V. Goel, R. Sridhar, "Load Balancing Methods for Ray Tracing and Binary Tree Computing Using PVM," *Parallel Computing*, 21, pp. 1963–1978, 1995.

J15 R. Sridhar, **C. N. Sekharan**, "Highly Parallelizable Problems on Sorted Intervals," *Parallel Computing*, 21, pp. 433–446, 1995.

J14 R. Sridhar, K. Han, **C. N. Sekharan**, "Efficient Algorithms for Shortest Distance Queries on Special Classes of Polygons," *Theoretical Computer Science*, 140, pp. 291–300, 1995.

J13 **C. N. Sekharan**, S. Hannenhalli, "Efficient Algorithms for Computing Matching and Chromatic Polynomials in Series-Parallel Graphs," *Journal of Combinatorial Mathematics and Combinatorial Computing*, 15, pp. 19–32, 1994.

J12 **C. N. Sekharan**, S. T. Hedetniemi, T. V. Wimer, "Enumeration Techniques for Certain *k*-Terminal Families of Graphs," *Journal of Combinatorics, Information and System Sciences*, 19(3–4), pp. 131–148, 1994.

J11 D. Joshi, R. Sridhar, **C. N. Sekharan**, "The *k*-Neighbor, *r*-Domination Problems on Interval Graphs," *European Journal of Operational Research*, 79(2), pp. 352–368, 1994.

J10 **C. N. Sekharan**, L. V. S. Lakshmanan, M. Medidi, "Efficient Parallel Algorithms for Finding Chordless Cycles in Graphs," *Parallel Processing Letters*, 3(2), pp. 165–170, 1993.

J9 R. Dutton, **C. N. Sekharan**, R. Brigham, "On the Number of Independent Sets of Nodes in a Tree," *The Fibonacci Quarterly*, 31(2), pp. 98–105, May 1993.

J8 **C. N. Sekharan**, "Matchings in Uniterminal Graphs," *Journal of Combinatorics, Information and System Sciences*, 17(3–4), pp. 195–202, 1993.

J7 **C. N. Sekharan**, "Isomorphism Testing of *k*-Trees is in NC, for Fixed *k*," *Information Processing Letters*, 34, pp. 283–287, 1990.

J6 **C. N. Sekharan**, S. S. Iyengar, "NC Algorithms for Recognizing Chordal Graphs and *k*-Trees," *IEEE Transactions on Computers*, 37(10), pp. 1178–1183, Oct. 1988.

J5 D. R. Shier, **C. N. Sekharan**, "Algorithms for Computing the Chromatic Polynomial," *Journal of Combinatorial Mathematics and Combinatorial Computing*, 4, pp. 213–222, 1988.

J4 **C. N. Sekharan**, S. S. Iyengar, R. Laskar, "Maximal Clique Separators of Chordal Graphs," *Congressus Numerantium*, 62, pp. 203–215, May 1988.

J3 **C. N. Sekharan**, R. Laskar, C. E. Veni Madhavan, "Chromatic Polynomials of Chordal Graphs," *Congressus Numerantium*, 61, pp. 133–142, May 1988.

J2 **C. N. Sekharan**, R. Sridhar, S. S. Iyengar, "On the Minimum Vocabulary Problem," *Journal of the American Society for Information Science*, 38(4), pp. 234–238, 1987.

J1 **C. N. Sekharan**, S. S. Iyengar, P. P. Chen, "A Denotational Semantics for the Generalized ER Model and a Simple ER Algebra," *International Journal of Computer Mathematics*, 24(2), pp. 99–113, 1988.

PEER-REVIEWED CONFERENCE PROCEEDINGS

C49 **C. N. Sekharan**, "Efficient Detection of Nontrivial Block Hankel Structure: Algorithms and Performance Comparison," *SIAM Conference on Applied and Computational Discrete Algorithms (ACDA27)*, Feb. 2027. ACCEPTED NOV 2026

C48 K. Mody, S. Radhakrishnan, **C. N. Sekharan**, "Traversal-Invariant Positional Encoding for Serialized Graphs," *Neural Information Processing Systems (NeurIPS 2026)*, Main Track — Archival Paper, Dec. 2026.

C47 **C. N. Sekharan**, R. Dominguez, J. Baca, "Time-On-Air Optimization With and Without Regulatory Constraints in LoRa-Class Networks," *IEEE Global Communications Conference (GLOBECOM 2026)*, Dec. 2026.

C46 **C. N. Sekharan**, M. R. Detroja, "SECUIR: Design and Implementation of an Efficient, Secure, and Access-Controlled Smart Information Retrieval System," *2026 IEEE International Conference on Intelligence and Security Informatics (ISI)*, pp. 7–12, Aug. 2026.

C45 N. Kavish, K. A. Demir, **C. N. Sekharan**, B. Liu, "Requirements Engineering with Generative AI: Improving Requirements Development Efficiency with Structured Prompt Technique (SPT)," *2026 International Conference on Artificial Intelligence, Computer, Data Sciences and Applications (ACDSA)*, pp. 1–8, Feb. 2026.

C44 C. Ndagijimana, M. Sookhak, H. Zarini, **C. N. Sekharan**, M. Atiquzzaman, "Joint UAV-UGV Positioning and Trajectory Planning via Meta A3C for Reliable Emergency Communications," *IEEE GLOBECOM 2025*, pp. 1724–1729, Dec. 2025.

C43 A. Phadke, **C. N. Sekharan**, K. K. Vasudeva, D. Kar, "Unifying Sky and Chain: A Perspective on Blockchain's Role in UAV Swarms," *2nd International Conference on AI, Blockchain, and Internet of Things (AIBThings)*, IEEE, pp. 1–9, Sep. 2024.

C42 **C. N. Sekharan**, P. S. Vuppala, "Fine-Tuned Large Language Models for Improved Clickbait Title Detection," *International Conference on Artificial Intelligence (ICAI), CSCE 2023*, IEEE, pp. 215–220, July 2023.

C41 A. Phadke, F. A. Medrano, T. Chu, **C. N. Sekharan**, M. J. Starek, "Drone2Drone (D2D): A Search and Rescue Framework Module for Finding Lost UAV Swarm Agents," *ICAI, CSCE 2023*, IEEE, pp. 903–908, July 2023.

C40 S. G. Krishna, A. Narasimhan, S. Radhakrishnan, **C. N. Sekharan**, "Parallel Techniques for Compressing and Querying Massive Social Networks," *IEEE International Parallel and Distributed Processing Symposium Workshops (IPDPSW)*, pp. 838–847, May 2023.

C39 S. G. Krishna, A. Narasimhan, S. Radhakrishnan, **C. N. Sekharan**, "On Factorizing Million Scale Non-Negative Matrices using Compressed Structures," *ALLDATA 2023: Ninth International Conference on Big Data, Small Data, Linked Data and Open Data*, pp. 39–44, 2023.

C38 **C. N. Sekharan**, S. Radhakrishnan, M. R. Nelson, "A *k*-Way Partitioning Framework for Compression on Social Networks," *International Conference on Computational Science and Computational Intelligence (CSCI)*, Las Vegas, pp. 772–778, Dec. 2022.

C37 V. S. P. Arepalli, **C. N. Sekharan**, "Performance Benchmarking of PyScript and Comparative Results with JavaScript," *IEEE UEMCON 2022*, pp. 84–87, Oct. 2022.

C36 S. G. Krishna, S. Radhakrishnan, M. Nelson, A. Chatterjee, **C. N. Sekharan**, "On Compressing Time-Evolving Networks," *ALLDATA 2021*, Portugal, pp. 43–48, 2021.

C35 M. Nelson, S. Radhakrishnan, **C. N. Sekharan**, "Algorithms on Compressed Time-Evolving Graphs," *IEEE International Conference on Big Data*, pp. 227–232, 2019.

C34 M. Nelson, S. Radhakrishnan, **C. N. Sekharan**, "Billion-Scale Matrix Compression and Multiplication with Implications in Data Mining," *IEEE 20th International Conference on Information Reuse and Integration*, pp. 395–402, 2019.

C33 B. Sharma, **C. N. Sekharan**, F. Zuo, "Merkle-Tree Based Approach for Ensuring Integrity of Electronic Medical Records," *IEEE UEMCON*, New York, pp. 983–987, Nov. 2018.

C32 M. Nelson, S. Radhakrishnan, **C. N. Sekharan**, "Queryable Compression on Time-Evolving Social Networks with Streaming," *IEEE International Conference on Big Data*, Seattle, pp. 146–151, Dec. 2018.

C31 M. Nelson, S. Radhakrishnan, A. Chatterjee, **C. N. Sekharan**, "Queryable Compression on Streaming Social Networks," *IEEE International Conference on Big Data*, pp. 988–993, Dec. 2017.

C30 **C. N. Sekharan**, "A Probabilistic Graphical Model for Learning as Search," *IEEE 7th Annual Computing and Communication Workshop and Conference (CCWC)*, pp. 1–4, Jan. 2017.

C29 M. Nelson, S. Radhakrishnan, A. Chatterjee, **C. N. Sekharan**, "On Compressing Massive Streaming Graphs with Quadtrees," *IEEE International Conference on Big Data*, pp. 2409–2417, 2015.

C28 E. L. Post, **C. N. Sekharan**, "Comparative Study and Evaluation of Online Ad-Blockers," *International Conference on Information Science and Security (ICISS)*, IEEE, pp. 1–4, Dec. 2015.

C27 A. Chatterjee, S. Radhakrishnan, **C. N. Sekharan**, "Connecting the Dots: Triangle Completion and Related Problems on Large Data Sets Using GPUs," *IEEE International Conference on Big Data (Workshops)*, pp. 1–8, Oct. 2014.

C26 K. Läufer, **C. N. Sekharan**, G. K. Thiruvathukal, "PDC Modules for Every Level: A Comprehensive Model for Incorporating PDC Topics into the Existing Undergraduate Curriculum," *1st NSF/TCPP Workshop on Parallel and Distributed Computing Education*, 2011.

C25 M. Gutman, S. Radhakrishnan, C. Kim, **C. N. Sekharan**, K. Läufer, "GroupSpeak: High-Level Language Extension for Workflow Capability," *IEEE International Conference on Web Services (ICWS)*, pp. 1035–1036, July 2009.

C24 S. M. Banik, S. Radhakrishnan, T. Zheng, **C. N. Sekharan**, "Distributed Floor Control Protocols for Computer Collaborative Applications on Overlay Networks," *IEEE CollaborateCom 2005*, San Jose, CA, Dec. 2005.

C23 G. K. Thiruvathukal, **C. N. Sekharan**, "Community Information Technology Entrepreneurship Project," *ACM SIG Information Technology Education* (extended abstract), 2005.

C22 S. M. Banik, S. Radhakrishnan, **C. N. Sekharan**, "Multicast Routing with Delay and Delay Variation Constraints for Multimedia Applications," *7th IEEE Int'l Conf. on High Speed Networks and Multimedia Communications (HSNMC 2004)*, Toulouse, LNCS 3079, pp. 399–411, July 2004.

C21 **C. N. Sekharan**, R. Dumais, T. Henmi, J. Raby, "Fusion-Oriented Real-Time Multi-Agent Testbed for the Future Force," *World Multi-Conference on Systemics, Cybernetics and Informatics (SCI 2004)*, July 2004.

C20 W. S. Al-Numay, S. Radhakrishnan, T. Zheng, **C. N. Sekharan**, "Interaction of Wireless TCP Schemes and Rerouting: Analytical Models and Simulation," *IEEE ICDCS Workshops*, Rhode Island, pp. 883–889, May 2003.

C19 **C. N. Sekharan**, S. Radhakrishnan, S. M. Banik, N. S. V. Rao, "Duplicating Delays in Network Multicasting: Model, Algorithm, and Validation," *Int'l Conf. on Communications, Internet, and Information Technology (CIIT)*, Scottsdale, AZ, pp. 541–546, Oct. 2003.

C18 **C. N. Sekharan**, Y. Kanitkar, B. Broome, "Data Warehousing System for Integrated Weather Analysis (SIWA) for the Objective Force," *World Multiconference on Systemics, Cybernetics and Informatics*, Orlando, pp. 775–781, July 2003.

C17 **C. N. Sekharan**, K. Saranathan, R. Sivakumar, Z. Taherbhai, "Scalability and Performance of Multi-threaded Algorithms for International Fare Construction on High-Performance Machines," *International Conference on High-Performance Computing (HiPC)*, LNCS 2552, pp. 452–462, Dec. 2002.

C16 G. Racherla, S. Radhakrishnan, **C. N. Sekharan**, "Performance Evaluation of Wireless TCP Schemes under Different Rerouting Schemes in Mobile Networks," *IEEE Region 10 Conference (TENCON '98)*, pp. 93–96, Dec. 1998.

C15 S. Radhakrishnan, G. Racherla, **C. N. Sekharan**, N. S. V. Rao, S. G. Batsell, "DST — A Routing Protocol for Ad Hoc Networks using Distributed Spanning Trees," *IEEE Wireless Communications and Networking Conference (WCNC)*, New Orleans, pp. 1543–1547, Sep. 1999.

C14 G. Racherla, S. Radhakrishnan, **C. N. Sekharan**, "A Distributed Rerouting Algorithm for Mobile–Mobile Connections in Connection-Oriented Networks," *7th International Conference on Computer Communications and Networks (ICCCN)*, pp. 40–44, 1998.

C13 C. Colby, R. Jagadeesan, K. Läufer, **C. N. Sekharan**, "Interaction and Concurrency in the Curriculum — A Sophomore Course," *OOPSLA Workshop on Education*, 1998.

C12 M. Lee, R. Sridhar, **C. N. Sekharan**, "Parallel Recognition of Doubly Chordal Graphs," *High Performance Computing on the Information Superhighway (HPC Asia '97)*, Seoul, 1997.

C11 **C. N. Sekharan**, U. B. Vemulapati, A. T. Irwin, Z.-H. Ma, W. J. Porthouse Jr., "MasPaWS – A Massively Parallel War Simulator," *Winter Simulation Conference (WSC)*, Orlando, FL, pp. 744–751, Dec. 1994.

C10 D. S. Joshi, R. Sridhar, **C. N. Sekharan**, "A Fast Algorithm for Generalized Network Location Problems," *ACM Symposium on Applied Computing*, pp. 701–708, 1993.

C9 **C. N. Sekharan**, V. Goel, "Ray Tracing and Binary Tree Computations Using PVM," *26th Hawaii International Conference on System Sciences (HICSS)*, pp. 104–105, Jan. 1993.

C8 S. Hannenhalli, K. S. Perumalla, **C. N. Sekharan**, R. Sridhar, "A Distributed Algorithm for Ear Decomposition," *5th International Conference on Computing and Information*, pp. 180–184, May 1993.

C7 D. S. Joshi, R. Sridhar, **C. N. Sekharan**, "Efficient Algorithms for All-Pairs Shortest Path Problems on Interval, Circular-Arc, and Directed Path Graphs," *5th International Conference on Computing and Information*, pp. 31–35, May 1993.

C6 A. Jain, **C. N. Sekharan**, "An Efficient Parallel Algorithm for Min-Cost Flow on Directed Series-Parallel Networks," *7th International Parallel Processing Symposium*, pp. 188–192, 1993.

C5 **C. N. Sekharan**, S. Hannenhalli, "Efficient Algorithms for Computing Matching and Chromatic Polynomials on Series-Parallel Graphs," *4th International Conference on Computing and Information (ICCI '92)*, Toronto, pp. 42–45, May 1992.

C4 **C. N. Sekharan**, R. Sridhar, "On the Recognition of Strongly Chordal Graphs," *29th Annual Allerton Conference on Communication, Control and Computing*, pp. 475–483, Oct. 1991.

C3 **C. N. Sekharan**, S. T. Hedetniemi, "Fast Parallel Algorithms for Tree Decomposing and Parsing Partial *k*-Trees," *26th Annual Allerton Conference on Communication, Control and Computing*, Urbana-Champaign, pp. 283–292, 1988.

C2 S. T. Hedetniemi, R. Laskar, A. Majumdar, **C. N. Sekharan**, "Fractional Domination in Graphs," *Seventh Hungarian Colloquium on Combinatorics, Finite and Infinite Fields*, Eger, Hungary, 1987.

C1 L. V. S. Lakshmanan, **C. N. Sekharan**, C. E. Veni Madhavan, "Recognition and Top-Down Generation of Beta-Acyclic Database Schemes," *Foundations of Software Technology and Theoretical Computer Science (FSTTCS)*, LNCS 181, Springer-Verlag, pp. 344–366, 1984.

BOOKS AND MANUSCRIPTS

2013 *Object-Oriented Data Structures Featuring C++* (with R. Sridhar and L. Wise), Amazon Publishing.

2006 *Object-Oriented Data Structures Featuring Java* (with R. Sridhar and L. Wise), manuscript.

OTHER PUBLICATIONS (PREPRINTS)

2026 **C. N. Sekharan**, J. Yu, A. Phadke, J. K. Koda, P. Gantla, "A Five-Level Operational Maturity Framework for Machine Learning in Midstream Oil and Gas," *Preprints.org*, Oct. 2026.

2024 A. Phadke, I. A. Hadimlioglu, T. Chu, **C. N. Sekharan**, "Integrating Large Language Models for UAV Control in Simulated Environments: A Modular Interaction Approach," *arXiv:2410.17602*, Oct. 2024.

POSTERS

2025 S. Hu, S. Uprety, S. Radhakrishnan, **C. N. Sekharan**, P. Silvera, J. Cummins, K. Porter, S. R. Nella, D. Schaufelberger, B. Hancock, S. Salunke, "Automated Extraction of Pharmaceutical Knowledge Using Artificial Intelligence for the STEP Database," *17th Annual Conference of the European Paediatric Formulation Initiative (EuPFI)*, Bordeaux, France, Sep. 16–18, 2025.

2013 J. P. Kaylor, K. Läufer, **C. N. Sekharan**, G. K. Thiruvathukal, "Introducing PDC Topics into CS1/2 and a Mobile- and Cloud-Based Intermediate Software Design Course," *Third NSF/TCPP Workshop on Parallel and Distributed Computing Education*.

2007 "In Silico Retrieval and Cataloging of GenBank DNA Sequences Adjacent to Interspersed Repetitive Elements" (with Akhtar, Laten, and Steinway), *Bioinformatics Conference*, Northwestern University.

PATENTS AND INTELLECTUAL PROPERTY

2026 **C. N. Sekharan**, M. Sookhak, "Systems and Methods for Resource-Efficient Cooperative Collision Warning at Geospatial Conflict Nodes Using Participant Devices," U.S. Provisional Patent Application, Texas A&M University System, filed October 14, 2026.

SOFTWARE ARTIFACTS

Research software maintained on GitHub (account `csekharan`), 2026.

REPOSITORY	AREA — DESCRIPTION	VISIBILITY	CREATED
`encrypted-memory-demo`	Software Security — In-memory exposure of encrypted programs (demonstration)	Public	Nov 2026
`DiffAgency-prompts-knowledge`	Generative AI — Software framework for agent-driven recursive specification	Private	Nov 2026
`SQuAD-Experiment-Final`	Generative AI — Zero-shot LLM question-answering evaluation (SQuAD 2.0)	Private	Oct 2026
`chromatic-polynomial`	Graph Algorithms — Fast chromatic polynomial computation	Private	Oct 2026
`crossguard-valhalla-prototype`	Transportation Safety — On-device routing prototype for CrossGuard	Private	Oct 2026
`block-hankel-recognition`	Algorithms — Block-Hankel matrix recognition (C++ benchmarks)	Public	Sep 2026
`Drug-Vehicle`	Pharmaceutical AI — Drug/vehicle investigation curation from publications	Private	Sep 2026
`excipient-extractor-web`	Pharmaceutical AI — Web front end for excipient extraction	Private	Aug 2026
`excipient-extractor`	Pharmaceutical AI — Vision-based extraction of investigated excipients	Private	Aug 2026
`step-excipient-curator`	Pharmaceutical AI — STEP database excipient safety curation web app	Private	Jul 2026
`ROADS`	Transportation Safety — National roadway crash analytics dashboards	Private	Jul 2026
`pera-predictor`	Pediatric Drug Safety — Paediatric Excipient Risk Assessment (PERA) tool	Private	Jun 2026
`nhtsa-iss-pedestrian-analysis`	Transportation Safety — NHTSA crash data and pedestrian safety analysis (USDOT BAA)	Private	Jun 2026
`gulf-orphan-wells-atlas-agent`	Environmental Risk — AI-agent extension of the Gulf Orphaned Wells Atlas	Private	May 2026
`unified-excipient-extractor`	Pharmaceutical AI — LLM extraction of excipient safety knowledge from publications	Private	May 2026

REPOSITORY	AREA — DESCRIPTION	VISIBILITY	CREATED
`lora-time-on-air-ilp`	Wireless Networks — LoRa time-on-air optimization (ILP model)	Public	May 2026
`RRC-Risk-Scoring-2024`	Oil and Gas Safety — Texas RRC well plugging priority scoring	Private	May 2026
`texas-coastal-wells-atlas`	Environmental Risk — Interactive Texas coastal orphaned wells visualization	Private	Apr 2026
`gulf-orphan-wells-atlas`	Environmental Risk — Gulf orphaned and idled wells atlas	Private	Apr 2026
`Compression`	Data Compression — Memory-efficient trie structures	Private	Mar 2026
`crossguard`	Transportation Safety — Real-time collision warning at intersections (Go backend + Android app)	Private	Mar 2026

INVITED TALKS AND PRESENTATIONS

Sep 2026	"Curating Pharmacological Knowledge from Scientific Studies Using AI: Connecting the Dots," COECS Seminar Series, TAMU-CC.
Apr 2026	Guest lecture, COSC 4354 Senior Capstone Project, TAMU-CC.
Mar 2026	"AI Research and Use of AI Tools," CPIRA Council, TAMU-CC.
Feb 2026	"Data Compression in Social Networks," iCORE talk, TAMU-CC.
Jan 2026	**Invited talk:** "Curation of Excipient Safety/Toxicity Properties from Pharmaceutical Studies," 5th Annual AI/ML in Pediatric Research Symposium, Johns Hopkins All Children's Hospital, St. Petersburg, FL.
Fall 2025	"AI for Pharmaceutical Knowledge Discovery," iCORE presentation, TAMU-CC.
Earlier	Invited talks and conference presentations at the University of Toronto, Wayne State University, Washington State University, University of New Hampshire, University of Bordeaux, Indian Institute of Technology, and Indian Institute of Science on parallel processing, networking, and combinatorial optimization.

TEACHING

TEACHING INNOVATION AND CURRICULUM DEVELOPMENT (TAMU-CC)

- Designed and taught a new graduate course, **COSC 6363 Software Development with Generative AI** (taught twice).
- Redesigned and taught **COSC 4370 Models of Computation** (undergraduate; three times).
- Redesigned and taught **COSC 6393 Research Methods in Computer Science** (graduate; three times).
- Redesigned and taught **COSC 3373 Software Project Management** as COSC 4396 Directed Independent Study to help students graduate.
- Redesigned and taught **COSC 1320 C Programming (for Engineers)**.

UNDERGRADUATE COURSES

- C Programming (for Engineers)
- Object-Oriented Programming
- Models of Computation
- Software Project Management
- Data Structures I and II
- Discrete Structures
- Computer Networks
- Concrete Mathematics
- Database Systems (online)
- Data Warehousing and Data Mining
- Introduction to Parallel Computing
- Design and Analysis of Algorithms

GRADUATE COURSES (M.S. AND PH.D.)

- Software Development with Generative AI
- Application Development with LLMs (Selected Topics)
- Research Methods in Computer Science
- Cryptography and Blockchain Technologies (module)
- Parallel Computing Concepts
- High Performance Computing
- Database Programming
- Design and Analysis of Algorithms
- Graphical Network Programming
- Operating Systems
- Ph.D. topics courses at UCF: Parallel Algorithms and Architectures; Current Topics in Algorithms; Advanced Topics in Parallel Algorithms; Advanced Topics in Graph Algorithms

STUDENT SUPERVISION AND MENTORING

PH.D.

2027	Chair: Tanmoy Saha
2026	Co-Chair: Quan Nguyen
2025	Co-Chair: Cyprien Ndagijimana
2022 – 2025	Committee Member: Abhishek Phadke; Ruben Dominguez; Benjamin Ghansah
1993 – 2000	Committee Member: Caroline St. Claire, DePaul University (external, 2000); Amit Jain, Muralidhar Medidi, and Thomas Wilson, University of Central Florida

M.S.

2026	Thesis Chair: Ishra Banu (expected Fall 2027 thesis completion)
2025 – 2026	Thesis Chair: Vishakan Umapathy (graduated Aug 2026)
2025	Thesis Committee Member: Jeremy Dean; Matthew Kastl; Abdullah Anjum
1989 – 1993	Thesis supervisor for 9 M.S. students, University of Central Florida

UNDERGRADUATE

2026	Directed Independent Study Supervisor: Mark Hernandez
Oct 2025	Undergraduate advising and mentoring
Spring 2025	Capstone Supervisor/Mentor: Christian Duff; Noah Gonzalez
Loyola	Supervised 72 undergraduate and graduate students on independent study and programming projects, Loyola University Chicago

INTERDISCIPLINARY PROGRAM DEVELOPMENT

TEXAS A&M UNIVERSITY–CORPUS CHRISTI

- Led approval of the M.S. in Data Science (joint with Mathematics) by the Texas Higher Education Coordinating Board; launched Fall 2023.
- Worked with the Conrad Blucher Institute for Surveying and Science to develop dual-credit partnerships with public high school districts to strengthen the pipeline into geospatial programs (2022–23).

LOYOLA UNIVERSITY CHICAGO

- Collaborated with Mathematics and Statistics to launch the M.S. in Data Science (Fall 2022).
- Supported the Parkinson School of Health Sciences in creating the M.S. in Health Informatics (2018–19).
- Collaborated with Biology, Mathematics and Statistics, Physics, and Chemistry to develop the B.S. in Bioinformatics, B.S. in Data Science, and joint majors; department faculty contributed to Psychology's Neuroscience major (2018–19).
- Worked with the School of Law and Information Technology Services on a successful application for National Center of Academic Excellence in Cyber Defense Education designation (2020).
- Instrumental in developing the M.S. in Information Technology (2008).
- Led development of the Computer Crime & Forensics minor with Criminology and Criminal Justice, now the department's second-largest minor (2008).
- Department helped the School of Education create a new M.Ed. in School Technology.
- Department collaborated with English to create the Center for Textual Studies and Digital Humanities and an M.A. in Digital Humanities.
- As Assistant to the Provost, worked with 5 deans, 30 chairs and program directors, and 80 faculty across the humanities, social and natural sciences, business, nursing, communication, and social work to build a slate of high-demand online summer and January-term courses to improve retention and graduation (2010–12).
- Worked with US Army scientists and climatologists on information fusion and meteorological problems for Army commanders (2002–04).

ADMINISTRATIVE ACCOMPLISHMENTS

TEXAS A&M UNIVERSITY–CORPUS CHRISTI (CHAIR, 2022–2024)

- Faculty new research funding of $4.5 million in 2022 (NIH, TxDOT, NASA, NSF, DOT); student enrollments, research grants, and faculty publications reached all-time highs (2022–23).
- Graduate enrollment grew 150% (91 in Fall 2021 to 230 in Fall 2022); obtained $15,000 in graduate recruitment scholarships.
- Developed the CS Growth Plan and Faculty Hiring Plan; hired three Professional Assistant Professors (Drs. Shamseddine, Hadimlioglu, Demir) and five adjunct faculty.
- Moved forward promotion packets for four faculty (1 TT, 3 NTT); substantially improved faculty workload and P&T policies (2023).
- Secured $100K LAPSE funding for lab renovations (iCORE, CSCI Lab, GIS Lab, survey equipment).
- Renewed NSA/DHS National Center of Academic Excellence in Cyber Defense Education designation for B.S. Computer Science (Cybersecurity), 2022–2027.

- Facilitated research collaborations with the Conrad Blucher Institute and the Lone Star UAS Center of Excellence; partnered with LSUASC, CBI, and AgriLife leadership.
- Revised policies for graduate assistantships, admissions, GA appointments, course offerings, workload, assessment, outreach, and internships; established M.S. new-student orientation; organized faculty retreat; launched department website revamp.
- Hosted CAHSI workshops for Hispanic-Serving Institutions (Summer 2022) and GIS and Computer Science Industry Advisory Boards (2022, 2023).

LOYOLA UNIVERSITY CHICAGO

- NSA/DHS National Center of Academic Excellence in Cyber Defense Education designation for B.S. Cybersecurity, 2020–2025.
- (Provost's Office) Led university-wide implementation of summer online classes for undergraduates and of a new two-week January intersession across five colleges; both are now part of the standard university schedule.
- Led development and implementation of a department strategic plan, creating new majors, minors, and professional master's programs that tripled undergraduate and doubled graduate enrollments.
- Fostered industry–department relationships that garnered corporate grants; established an industry advisory group and alumni network; more than 40% of faculty publications are student co-authored.
- Partnered with NCWIT to attract and retain women in computing; Co-PI on an NSF grant providing $5,000 scholarships to over 100 students from under-represented groups.
- Obtained funding for computing laboratories with high-end server infrastructure, NVIDIA GPU workstations, and a high-performance cluster.

SERVICE

DEPARTMENT AND COLLEGE — TEXAS A&M UNIVERSITY–CORPUS CHRISTI

2026 – present	Ph.D. Computer Science Program Coordinator (major service)
2026	Member, COECS Taskforce on Enrollment
2025 – present	Member, Ph.D. Steering Committee
2025 – present	Member (non-voting), Computer Science Undergraduate Studies Committee and Graduate Studies Committee
2025 – 2026	Department Chair stand-in for Dr. Kar (various dates)
2025 – 2026	ABET Self-Study Coordinator, Computer Science (Systems Programming Concentration): ~20 weekly self-study meetings, SYPO assessment report reviews, self-study corrections, catalog and degree audits, and response meetings
2024 – 2026	Senior Capstone Judge
2025	Chair, Faculty Hiring Committee (Spring and Fall)
2025	Member, Department of Computer Science Promotion and Tenure Committee (Drs. Sookhak, Wang, Medrano); Member, Department of Engineering Promotion Committee
2025	Computer Science M.S. Program Self-Study Report Committee
2023	Moderator, COECS Debate on Generative AI
2022 – 2024	Member, Administrative Council, College of Engineering and Computer Science

UNIVERSITY — TEXAS A&M UNIVERSITY–CORPUS CHRISTI

2023	Member, Life Sciences Chair Hiring Committee
2023	Resource person for use of Generative AI in the classroom
2022 – 2023	Judge/Referee, Research and Innovation Symposium
2022	Islander Day recruitment events — program presentations to prospective students

LOYOLA UNIVERSITY CHICAGO

2021	Member, STEM Building Task Force
2020	Member, Dean Search Committee; Member, STEM Interdisciplinary Initiative Task Force
2018	Task Force member, Global Education Outreach
2017	Acting Graduate Program Director
2015 – 2016	Chair, Promotion Committee for faculty members
2012 – 2014	Online M.S. Information Technology program committee
2011 – 2015	Mentor for first-generation college students, Achieving College Excellence
2011	Chair, Core Review Committee for Quantitative Knowledge; Member, Dean's Administrative Reductions Committee
2010 – 2011	Chair, Search Committee for Criminal Justice Chair
2010	Participant, President's retreat
2009 – 2010	Chair, subgroup on distance learning and satellite campuses, Provost's Task Force on Distance Learning and Global Education
2007	Representative to the Chicago Mayor's Council of Technology Advisors
2005 – 2011	Annual Loyola Science Fair participation
2007 – 2008	Computer Science Program Assessment
2005 – 2006	Graduate Program Co-Director
2005	Member, Presidential Advisory Council; Member, Search Committee for Vice President of Information Technology Services
2004	Member, Search Committee for Senior Associate Dean, SCTPS
2003 – 2004	Chair, Space Planning Committee
2003	Invited speaker, Emergency Management Planning and Recovery workshop for federal agencies (NIST standards), Chicago
2002 – 2003	Chair, Bioinformatics Committee
1998 – 2000	Member, Information Technology Steering Committee
1998 – 1999	Member, Graduate Studies Coordinating Board; Member, Executive Committee of the Graduate School
1999	Curriculum Committee member, Academic Council
1995 – 1999	Graduate Program Director in Computer Science
1993 – 2000	Faculty search committees (chair 1995–97); Undergraduate Curriculum Committee (1993–96); Student Recruiting (1993–96); Computer Laboratory, Internship, and Space Planning Committees (1995–96); Assembler/Architecture/Discrete Mathematics Subcommittee (1997)

1996	Member, Task Force for Merging Master's and Ph.D. Councils
1995 – 1997	Mundelein Committee for certificate and short courses for Chicago-area professionals; short-course instructor, Oracle Database Administration (Fall 1997)

PROFESSIONAL AND EXTERNAL SERVICE

2020 – present	Commissioner, ABET Computing Accreditation Commission (CAC); CAC Team Chair (annual accreditation visits, including Nov 5–12, 2025 and Oct 3–6, 2026 to a Texas university, a simultaneous CAC/EAC visit)
2022 – 2026	Attendee, ABET CAC Annual Commission Meeting, Baltimore, MD (each July)
2026	Member, ABET CAC Consistency Committee (Summer 2026)
2026	Reviewer, IEEE GLOBECOM 2026
2025	Technical Advisory Team Member, Texas Integrated Flooding Framework — Component 1: Data and Monitoring Gap Analysis
2025	External Program Evaluator, Ph.D. in Computer Science, Kean University
2025	ABET New Criteria Meeting
2023 – 2024	ABET/CAC Criteria subcommittees on AI and Emerging Areas in Computing
2015 – 2019	ABET Program Evaluator
2017	Session Chair, IEEE Computing and Communication Workshop and Conference
2015	Reviewer, *The VLDB Journal*, Springer-Verlag
2013 – 2014	Program Committee Member, EduHPDC — Workshop on Parallel, Distributed, and High-Performance Computing in Undergraduate Curricula
2011	Evaluator of candidates, American Council on Education Fellows Program
2009, 2010	External Reviewer for Computer Science, St. Louis University (2009) and Northeastern Illinois University (2010)
Ongoing	Referee: IEEE Access, IEEE Transactions on Computers, IEEE Transactions on Computational Social Systems, Algorithmica, Discrete Applied Mathematics, Information Processing Letters, NSF, IEEE SPDP, IPPS, ICPP, and FSTTCS

COMMUNITY OUTREACH

2025	"Introducing AI" for Corpus Christi ISD high school students, Pegasus Lab (April 29, 2025)

CONSULTING AND INDUSTRY ENGAGEMENT

2026 – 2027	Consultant, NIH / Advanced Biosciences Lab, University College London — STEP 2.0 Database, AI/ML Curation of Pediatric Excipients (Research + Software Development), Phase 2
2024 – 2025	Consultant, NIH / Advanced Biosciences Lab, University College London — STEP 2.0 Database, Phase 1
2026	Industry engagement with Buckeye: AI for cavitation/vibration analysis and digital twins
2025	Industry engagement with Williams Companies and Rosen leadership on Hard Spots research (midstream pipelines)
2025	Anomaly detection in reciprocating compressors with Burckhardt Compression (Switzerland); research exploration and white paper

2013 – 2014	Intellectual Property Consultant, Niro, Haller and Niro LLP
2007 – 2008	Intellectual Property Consultant, Wildman, Harold, Allen, and Dixon LLP
2002 – 2004	US Army Research Laboratories
1999 – 2001	United Airlines, Corporate R&D, Mt. Prospect, IL
1998	"Oracle PL-SQL Issues in Supplier Database," Amoco Chemicals, Lisle, IL
1992 – 1995	Science Applications International Corporation

PROFESSIONAL DEVELOPMENT

Sep 2026	Clarivate webinar: "Can Patent Teams Trust Agentic AI? Why Reliable Data Matters"
Aug 2026	Anthropic webinar: "Claude Science AMA: How to Accelerate Scientific Discovery"
Jun 2026	ABET CAC/CSAB Criteria Committee Proposed Changes Webinar
May 2026	ABET CAC Town Hall
Mar 2026	AAPS webinar: "AI/ML Techniques in Drug Formulation"
Feb 2026	ABET Visit Training Webinar
Sep 2025	17th Annual EuPFI Conference, "Formulating Better Medicines for Children," Bordeaux, France; TAMU-CC Health Sciences Symposium
May 2025	CAHSI Affinity Research Group (ARG) Certification
Apr 2025	DOE National Laboratories & TAMU-CC researchers event — M. Henry (PNNL), "Advancing the State-of-the-Art in AI and ML in Support of National Security and DOE Missions"
Feb 2025	iCORE talk: "Copyright Laws and AI"

PROFESSIONAL MEMBERSHIPS

- Senior Member, Institute of Electrical and Electronics Engineers (IEEE)
- Association for Computing Machinery (ACM)
- Council of Fellows, American Council on Education