Krishna Ramamoorthy

Curriculum Vitae

Santa Clara University, Computer Science & Engineering, 500 El Camino Real, Santa Clara, CA 95053

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EDUCATION

Doctor of Philosophy *Aug 2018 – Jun 2023*
Computational Science
University of California, Irvine & San Diego State University

Master of Science *Aug 2014 – May 2016*
Electrical Engineering
California State University, Northridge

Bachelor of Technology *Jun 2010 – May 2014*
Electronics and Communications Engineering
Amrita Vishwa Vidyapeetham, India

ACADEMIC APPOINTMENTS

Assistant Professor (Tenure-Track) *Sept 2024 – Present*
Department of Computer Science and Engineering
Santa Clara University

Lecturer *May 2023 – Jun 2024*
Department of Computer Science
San Diego State University

Teaching Associate (AY) *Aug 2021 – May 2023*
Department of Computer Science
San Diego State University

PROFESSIONAL EXPERIENCE

System Architect *Feb 2017 – Aug 2018*
Kaiser Permanente IT, Pasadena, CA

Test Engineer Intern *Jan 2016 – May 2016*
Aruba, a Hewlett Packard Enterprise Company, Sunnyvale, CA

GRANTS

2FURS (Faculty-mentored Undergraduate Research) Grant – $1,000 *2024*
Santa Clara University

Student Success Fee (SSF) Grant – $5,000 *2024*
San Diego State University

Student Success Fee (SSF) Grant – $10,000 *2021*
San Diego State University

UCI Associated Graduate Students Grant – $600 *2020*
University of California, Irvine

Seed Grant – INR 25,000 ($400 approx.) *2014*
Technology Business Incubator (TBI), Amrita Vishwa Vidyapeetham, India

AWARDS AND HONORS

Advancing AANHPI Educational Equity Scholarship - $500 *2022*
Bill & Melinda Gates Foundation (BMGF)

Student Travel Grant – IEEE WCNC - $750 *2022*
IEEE Wireless Communications and Networking Conference (WCNC), Austin, TX, USA

Deborah M. Dexter Endowed Scholarship – $750 *2020*
San Diego State University

ACM Student Research Competition – Finalist *2019*
34th IEEE/ACM International Conference on Automated Software Engineering

Natural Science, Inc. Best Research Award – $250 *2019*
ACSESS for Industry Conference

Scholastic Achievement Award *2016*
California State University, Northridge

INVITED PANELS

Higher Ed in STEM Oct 2023
Asian Pacific Islander Desi American Center
San Diego State University

INVITED TALKS

Pricing Strategies to Improve User Experience in Future 5G Communications Apr 2023
Colloquium at Computational Science Research Center
San Diego State University

TEACHING EXPERIENCE

Object-Oriented Programming and Advanced Data Structures (CSEN 79) Winter 2025
Santa Clara University
Developed original course content with a strong focus on in-class problem solving and coding. Introduced a term project component to give students hands-on experience applying the material.

Computer Networks (CSEN 233) Fall 2024
Santa Clara University
Developed new instructional material to emphasize practical application of network protocols.

Operating Systems (CS 480) Summer 2023, Summer 2024
San Diego State University
Converted the course into a fully project-based learning experience. In this accelerated 6-week format, students worked in groups to implement a new project each week based on the lecture topics.

Computer Organization (CS 240) Spring 2022, Fall 2022, Spring 2023, Fall 2023, Spring 2024
San Diego State University
Redesigned the course and lab structure to reflect modern industry requirements. Built a lightweight autograder to help students get instant feedback on their codes — a feature that was later adopted by other instructors.

Advanced Programming Languages (CS 420) Fall 2023, Spring 2024
San Diego State University
Introduced Haskell into the curriculum for the first time. Designed new lab modules to explore type systems and functional programming.

Intermediate Programming (CS 160) Fall 2021
San Diego State University
Created in-class exercises for students transitioning from beginner to intermediate JAVA programming.

PUBLICATIONS

Student co-authors I supervised are denoted with an asterisk (*).

1. A. Rajpurohit*, M. Kelley*, W. Wang, **K.M.K. Ramamoorthy**, "BALANCE: Bitrate-Adaptive Limit-Aware Netcast Content Enhancement Utilizing QUBO and Quantum Annealing," in Proc. IEEE Wireless Communications and Networking Conference (WCNC), Mar. 2025.
2. T. Kocher*, S. Braude* and **K.M.K. Ramamoorthy**, "Quantum-Accelerated Nash Equilibrium Search for Optimal Relay Selection in Wireless Networks ",in Proc. 2024 Intermountain Engineering, Technology and Computing (IETC), May 2024.
3. **K.M.K. Ramamoorthy**, W. Wang, K. Sohraby, Y. Zhao, "Proof-of-QoE NOMA Token: A Crypto Rewarding Concept To Incentivize Local Relay In Non-Orthogonal Multiple Access Wireless Networks," *International Conference on Computing, Networking and Communications (ICNC) Workshop on Computing, Networking and Communications (CNC)*, Feb. 2024.
4. Y. Song, **K.M.K. Ramamoorthy**, W. Wang and K. Sohraby, "A Use-It-Or-Lose-It Economic VCG Auction Approach For NOMA Wireless Relay Networks," *2023 IEEE International Conference on Omni-layer Intelligent Systems (COINS)*, Berlin, Germany, 2023, pp. 1-6.
5. **K.M.K. Ramamoorthy**, W. Wang and K. Sohraby, "Incentivize Non-Orthogonal Multiple Access In Wireless Multimedia Communications," *2023 IEEE Wireless Communications and Networking Conference (WCNC)*, Glasgow, United Kingdom, 2023, pp. 1-6
6. **K.M.K. Ramamoorthy**, W. Wang and K. Sohraby, "Orthogonality-Centric Pricing for Wireless Multimedia Multiple Access Networks," *ICC 2022 - IEEE International Conference on Communications*, Seoul, Korea, Republic of, 2022, pp. 2513-2518
7. E. Ballesteros, **K.M.K. Ramamoorthy** and W. Wang, "Exploring AV1 Encoder Potentials for Priority-Driven Wireless Multimedia Services," *2022 Intermountain Engineering, Technology and Computing (IETC)*, Orem, UT, USA, 2022, pp. 1-6.
8. **K.M.K. Ramamoorthy** and W. Wang, "Human Cognition Aware QoE For NOMA Pricing: A Prospect-Theoretic Augmentation To Non-Orthogonal Wireless Multiple Access," *2022 Intermountain Engineering, Technology and Computing (IETC)*, Orem, UT, USA, 2022, pp. 1-5.
9. **K.M.K. Ramamoorthy**, W. Wang and K. Sohraby, "NOMA Resource Block As A Commodity Box: Content-Centric QoE-Price Interplay In Wireless Multimedia Communications," *2022 IEEE Wireless Communications and Networking Conference (WCNC)*, Austin, TX, USA, 2022, pp. 2673-2678.
10. **K.M.K. Ramamoorthy** and W. Wang, "A QoE-Driven Pricing Scheme for Inter-Vehicular Communications With Four-Stage Stackelberg Game," in *IEEE Transactions on Vehicular Technology*, vol. 71, no. 3, pp. 3121-3130, March 2022.
11. **K.M.K. Ramamoorthy** and S. Mirzaei, "Design and Implementation of IoT based Cloud enabled Wireless Biometric Monitoring Device," *2021 IEEE 12th Annual Information Technology, Electronics and Mobile Communication Conference (IEMCON)*, Vancouver, BC, Canada, 2021, pp. 0530-0533.
12. **K.M.K. Ramamoorthy**, W. Wang and K. Sohraby, "NOMAP: A Pricing Scheme for NOMA Resource Block Selection and Power Allocation in Wireless Communications," *2021 IEEE International Symposium on Local and Metropolitan Area Networks (LANMAN)*, Boston, MA, USA, 2021, pp. 1-6.
13. **K.M.K. Ramamoorthy** and W. Wang, "Profit-Driven Cache Delegation: A Game-Theoretic Wireless Multimedia Offloading Solution," *ICC 2021 - IEEE International Conference on Communications*, Montreal, QC, Canada, 2021, pp. 1-6.
14. **K.M.K. Ramamoorthy** and W. Wang, "Prospect Theoretic Pricing For QoE Modeling In Wireless Multimedia Networking," *2020 Intermountain Engineering, Technology and Computing (IETC)*, Orem, UT, USA, 2020, pp. 1-6.
15. **K.M.K. Ramamoorthy** and W. Wang, "QoE-Sensitive Economic Pricing Model for Wireless Multimedia Communications Using Stackelberg Game," *2019 IEEE Global Communications Conference (GLOBECOM)*, Waikoloa, HI, USA, 2019, pp. 1-6.
16. **K.M.K. Ramamoorthy**, "User Preference Aware Multimedia Pricing Model using Game Theory and Prospect Theory for Wireless Communications," *2019 34th IEEE/ACM International Conference on Automated Software Engineering (ASE)*, San Diego, CA, USA, 2019, pp. 1265-1267.
17. **Ramamoorthy, K.M.K**, Wang, W., Sohraby, K. (2019). "Stackelberg Game-Theoretic Spectrum Allocation for QoE-Centric Wireless Multimedia Communications". In: Zhang, T., Wei, J., Zhang, LJ. (eds) Edge Computing – EDGE 2019. EDGE 2019. *Lecture Notes in Computer Science*, vol 11520. Springer, Cham.

18. Vallur, B.P., **Ramamoorthy, K.M.K.**, Mirzaei, S., Mirzai, S. (2019). "Cerebral Blood Flow Monitoring Using IoT Enabled Cloud Computing for mHealth Applications". In: Arai, K., Kapoor, S., Bhatia, R. (eds) Advances in Information and Communication Networks. FICC 2018. *Advances in Intelligent Systems and Computing*, vol 887. Springer, Cham.

19. Littlewood, P., Mirzaei, S., **Ramamoorthy, K.M.K.** (2018). "Reconfigurable IP-Based Spectral Interference Canceller". In: Voros, N., Huebner, M., Keramidas, G., Goehringer, D., Antonopoulos, C., Diniz, P. (eds) Applied Reconfigurable Computing. Architectures, Tools, & Applications. ARC 2018. *Lecture Notes in Computer Science*, vol 10824. Springer, Cham.

20. P. Littlewood, **K.M.K. Ramamoorthy** and S. Mirzaei, "Modeling of digital baseband interference canceler using Hilbert and Fourier Transforms," *2017 IEEE 13th International Colloquium on Signal Processing & its Applications (CSPA)*, Penang, Malaysia, 2017, pp. 123-128.

21. A. Chandramohan, **K.M.K. Ramamoorthy**, G. Sowmya, P.A. Surya Prasad, V. Vijay Krishna, and K.P. Peeyush,"Cost effective object recognition and sorting robot using embedded image processing techniques,"*in International Journal of Innovative Technology and Exploring Engineering (IJITEE)*, Apr. 2014.

SERVICE TO PROFESSION

Technical Program Committee
IEEE Wireless Communications and Networking Conference (WCNC): 2023, 2024, 2025
IEEE Global Communications Conference (Globecom): 2019
IEEE Intermountain Engineering, Technology and Computing Conference (IETC): 2024

Technical Reviewer
IEEE Communications Magazine — 2024
Results in Optics — 2023
International Journal of Electrical, Electronics and Computer Systems (IJEECS) — 2021

Judge
Student Research Symposium, San Diego State University — 2023

Faculty Advisor
Aztec Quantum Computing Club, San Diego State University — 2023–2024
Girls Who Code Chapter at San Diego State University — 2023–2024

STUDENT SUPERVISION

Student Mentees, Santa Clara University
Graduate Students

- Brian 2024–Present
- Mrudhula Lokesh 2024–Present
- Samarth Kulkarni 2024–Present
- Avani Vaidya 2024

Undergraduate Students

- Derek Chui 2024–Present

Student Mentees, San Diego State University
Undergraduate Students

- Michael Kelley 2023–2025
- Animesh Rajpurohit 2023–2025
- Riley Thompson 2023–2025
- Ashley Olson 2024–2025
- Tanner Kocher 2023–2024
- Samual Braude 2023–2024

PROFESSIONAL MEMBERSHIPS

IEEE Member 2021–Present
IEEE Communications Society 2021–Present

REFERENCES

Dr. Silvia Figueira
Position: Professor and Department Chair
Employer: Department of Computer Science and Engineering
Santa Clara University
Email: sfigueira@scu.edu

Dr. Wei Wang
Position: Professor (Ph.D. Advisor)
Employer: Department of Computer Science
San Diego State University
Email: wwang@sdsu.edu