Kianoosh Boroojeni, Ph.D.

CONTACT INFORMATION

Email Addresses & Phone: drboroojeni@gmail.com (preferred), kborooje@fiu.edu, +1(305) 200-9577
Home Address: 279 Conservation Dr, Weston, FL 33327 USA.
Work Address: School of Computing & Information Sciences, Florida International University, 11200 SW 8th St., Room CASE-335, Miami, Florida 33199, USA.
Webpages: www.cis.fiu.edu/faculty-staff/kianoosh-boroojeni, www.cs.fiu.edu/~kgholami
Nationality: U.S. Citizen

RESEARCH INTERESTS

Cybersecurity, Generative AI in CS Education, STEM Education and Computer Networks

(Authored 50+ scientific publications; 1150+ Google scholar citations; h-index: 19)

EDUCATION

Florida International University, Miami, Florida USA

Ph.D., Computer Science, April 2017.

M.S., Computer Science, April 2016

University of Tehran, Tehran, Iran

B.Eng., Computer Engineering, July 2012

EXPERIENCE

Florida International University, Miami, Florida USA
College of Engineering & Computing
Knight Foundation School of Computing & Info. Sciences

Associate Teaching Professor   **August 2023 — Present**

- **Chaired** the CS Subcommittee of Undergraduate Program Committee that modernized CS curriculum and integrated GenAI into its courses in a meaningful way.
- **Taught** different B.Sc. in CS required courses to more than 1000 students every year.
- **Chaired** the Programming Gateway Committee that oversees the coordinated efforts of 20 faculty members to synchronize the assessment policies of seven programming gateway courses that result in more than 10% completion rates by students.
- **Led** the collaboration of FIU and Google to integrate generative-AI tools powered by Large-Language Models (LLMs) into computer science education.
- **Investigated** the impact of using generative-AI tools powered by LLMs on students and instructors of computer science in U.S. universities.
- **Chaired** the College of Engineering & Computing Faculty & Staff Awards Committee recommending multiple award recipients to the dean of the college.
- **Coordinated** the efforts to implement best practices to support intensive programming courses, including CS I, II & III, Data Structures, and Operating Systems.
- **Participated** in the project "Center for Inclusive Computing Best Practices" by collaborating with his colleagues who teach Programming I and Programming II to work toward making all students feel included while learning computing.

Assistant Teaching Professor   **August 2017 — July 2023**

- Taught 16 different undergraduate courses and four Ph.D. and graduate-level courses
- Consistently achieved excellent/very-good teaching evaluations
- item **Co-taught** multiple sections of Applied Data Structures and Software Development System courses in the Google's Tech-Exchange Program to identify and recruit more Hispanic/Latinx and Black students into Google workforce.
- Conducted course lectures, facilitated classroom discussion sessions and held weekly office hours
- Developed teaching materials, scheduled lectures and graded exams, papers and assignments

- Redesigned online courses to receive Quality Matters (QM) Certifications
- Advised undergraduate student research
- Created two new cyber-security undergraduate courses on Blockchains (approved by SCIS)
- Improved average student perception survey results (4.6/5.0 overall)
- Promoted active learning atmosphere

*P*ost-Doctoral Fellow   **Spring & Summer 2017**

- Conducted DoD funded research on network algorithms, security and privacy of distributed sensor networks.
- Co-led research and mentoring efforts for NSF-sponsored Research Experience for Undergraduates and Teachers
- Facilitated discussion groups; designed and implemented team-building research initiatives for undergraduates
- Co-Developed training/workshops on research tools and methodologies for students
- Supervised undergraduate student research
- Disseminated research through peer-reviewed articles
- Wrote merit reviews for conference and journal papers
- Mentored graduate students

*G*raduate Assistant   **2012 — Spring 2017**

- Served as a research associate for the director of the School of Computing & Information Sciences
- Provided academic support and instruction to students and faculty
- Collaborated with researchers from Carnegie Mellon University and British Columbia University
- Assisted faculty members to teach and grade multiple undergraduate and graduate courses
- Performed administrative and clerical work; corrected and graded exam papers & prepared progress reports of students; attended meetings
- Guided laboratory exercises and projects
- Taught undergraduate & graduate courses and led discussion sections
- Planned, designed and developed assignments for multiple undergrauate and graduate courses
- Provided tutoring, mentoring, and assistance to students

COURSES TAUGHT **Face-to-Face, Remote, Hybrid and Online Classes** Total of 20 different courses (total students population: 4000+) in 101 sections including 11 CS/IT B.S. core courses, one CS Ph.D. core course, and three M.S. courses:

CAP 5701, Advanced Computer Graphics (Computer Science - M.S. elective course):
   Spring 2021: U01 – Spring 2022: U01 – Spring 2023: U01 – Spring 2024: U01

CIS 5370, Principles of Cybersecurity (CyberSecurity - M.S. core course):
   Fall 2021: U01

COT 5310, Theory of Computation I (Computer Science - Ph.D. core course):
   Fall 2020: RXAX, U01 – Fall 2021: U01 – Fall 2022: U01

TCN 5030, Computer Comm. & Networking Tech. (Computer Science - M.S. elective course):
   Fall 2018: RXAX, U01 – Summer 2019: RVCC – Summer 2020: RVCC – Summer 2021:
RVCC – Summer 2022: RVCC, RXCC

CIS 4731, Fundamentals of Blockchain Technologies (Computer Science - B.S. elective course):
   Fall 2022: RVC – Fall 2024 RVC

CNT 4713, Net-Centric Computing (Computer Science - B.S. elective course):
   Fall 2018: RVC – Spring 2019: RVC, U02 – Spring 2020: U02

CAP 4710, Principles of Computer Graphics (Computer Science - B.S. elective course):

Spring 2021: U01 – Spring 2023 U01 – Spring 2024 U01

COP 4610, Operating System Principles (Computer Science - B.S. core course):
Fall 2019: U01, U02 – Spring 2020: RVC – Summer 2020: RVCC – Fall 2020: U01, U02 – Spring 2021: U03, U04 – Summer 2021: U01C, U02C, U03C, U04C – Spring 2022: U03 – Summer 2022: RVDC, U01C

COP 4555, Principles of Programming Languages (Computer Science - B.S. elective course):
Fall 2020: U03A

COP 4338, Systems Programming (Computer Science - B.S. core course):
Summer 2018: U02C – Summer 2019: U02A – Spring 2020: U04 – Summer 2020: U01B, U02A – Spring 2021: U01, U02, U03 – Summer 2021: RVDC – Fall 2021: U01 – Spring 2022: U02 – Summer 2022: U01C – Fall 2022: U01 – Spring 2023: RVE, U03 – Fall 2023: RVC, U01 – Spring 2024: U01, UHB, RVC, RVE, RVG

COP 4226, Advanced Windows Programming (Computer Science - B.S. elective course):
Fall 2020: UHA – Fall 2021: UHA – Fall 2022: U01

CDA 4101, Structured Computer Organization (Computer Science - B.S. core course):
Fall 2019: RVC, RVD – Spring 2020: RVBB

CEN 4010, Software Engineering I (Computer Science - B.S. core course):
Fall 2020: RVD – Fall 2021: RVD – Spring 2022: U02

COP 3804, Intermediate Java Programming (Information Technology - B.S. core course):
Fall 2019: RVC

COP 3530, Data Structures (Computer Science - B.S. core course):
Summer 2019: U01C – Summer 2020: UH1C – Spring 2021: U03 – Summer 2021: U01C, U02C – Spring 2022: RVE – Summer 2022: U01C – Summer 2023: U01C – Spring 2024: U03

COP 3337, Programming II (Computer Science - B.S. core course):
Summer 2018: U01C – Spring 2019: RVD – Summer 2019: RVDC – Fall 2019: U05 – Fall 2020: RVD – Spring 2021: U02 – Spring 2022: U03 – Summer 2022: U01C – Spring 2023: U01, Summer 2023: U02C – Fall 2023: U02, U03 – Spring 2024: U01

CDA 3102, Computer Architecture (Computer Science - B.S. core course):
Summer 2021: U01C – Fall 2021: U01, U02 – Spring 2022: RVC – Summer 2022: U01C – Fall 2022: U01, U02 – Spring 2023: RVC, U03 – Summer 2023: U01C – Fall 2023: U01, RVE – Spring 2024: UHA

COT 3100, Discrete Structures (Computer Science - B.S. core course):
Fall 2017: RVC, U03, U04 – Spring 2018: U03, U04, U05 – Fall 2018: U03, U04 – Spring 2019: RVD, U03, U04, U05 – Summer 2019: RVBB, U01A – Fall 2019: U02, U03 – Spring 2020: RVD

COP 2250, Java Programming (Information Technology - B.S. core course):
Fall 2021: U01, U02 – Spring 2022: U01 – Fall 2022: U01, U02

COP 2210, Programming I (Computer Science - B.S. core course):
Summer 2020: RVDC, U04C

MAJOR PRESENTATIONS AND TALKS	**Google's Corporate Office**, Atlanta, Georgia USA

Designing Undergraduate Courses with Generative-AI   **December 2024**

- **Presented** the

ONLINE TEACHING   Redesigned courses COP3337, CNT4713, and TCN5030 to receive Quality Matters (QM) Certi-

fications. Received QM Certificate for COP337, others are under process.

Prepared and recorded 100+ hours of videos for the online courses.

NEW COURSE PROPOSALS	IDC 2020 Introduction to Crypto-currencies (for non-majors)
	CIS 4731 Fundamentals of Blockchain Technologies (CS: Systems elective)

UNDERGRADUATE RESEARCH SUPERVISION

Marcel Riera, Florida International University, Summer-Fall 2019

Ricardo Boetto, Florida International University, Summer 2019

Edwin Aguilar, Florida International University, Summer 2019

Eric Perez, Florida International University, Summer 2019

Aiko Dorothy Hassett, Middlebury College, Summer 2018

Janelie Diaz, University of Puerto Rico at Arecibo, Summer 2018

Sam Pisheh, University of California Berkeley, Summer 2017

Frank Liao, Carnegie Mellon University, Summer 2017

Henry Hu, University of California, Berkeley, Summer 2017

Sheila Alemany, Florida International University, Berkeley, Summer 2017

HONORS AND AWARDS

Knight Foundation School of Computing and Information Sciences Outstanding Faculty Award, Florida International University, 2025.

FIU 2022 Top Scholar Award in the category of Junior Faculty with Notable Gains in Student Learning and Success (Sciences), Florida International University, 2022.

Knight Foundation School of Computing and Information Sciences Excellence in Teaching Award, Florida International University, 2021.

Outstanding Research Mentor for Undergraduates Award, NSF REU SITE: ASSET: Research Experiences for Undergraduates in Advanced Secured Sensor Enabling Technologies, 2017-2019.

Best Paper Award in REU-NSF(National Science Foundation) Workshop for the paper entitled "STOP: Semi-circular Trapping Overlay Protocol for Improving Source Location Privacy in Distributed Sensor Networks," 2017

Best Graduate Student Research Award, School of Computing and Information Sciences, Florida International University, 2016.

Dissertation Year Fellowship Award,The University Graduate School, Florida International University, 2016.

Endorsement of the authored book "Oblivious Network Routing: Algorithms andApplications" by two Turing Award winners: John Hopcroft (Cornell University) and Silvio Micali (MIT): "*The clarity of its exposition and its choice and sequencing of topics are masterful. – Silvio Micali*".

Best Paper Award, Boroojeni, Kianoosh G., S. Mokhtari, S. S. Iyengar, "A Hybrid Model for Forecasting Power and Demand in Smart Grids." *Computer Communication Networks, Elsevier Eight International Conference on.* Elsevier, 2014

Graduate Assistantship, School of Computing and Info. Sciences, Florida Intl. University, 2012

1$^{\text{st}}$ place in RoboCup competition among all the students of Department of ECE, University of Tehran, Tehran, IR, 2011

PROFESSIONAL ACTIVITIES

Technical Program Committee Member, 42nd IEEE Conference on Local Computer Networks, Singapore, 2017

Reviewer, IEEE Transactions on Smart Grids, 2017, 2018

Reviewer, Electric Power and System Research, 2017, 2018

Reviewer, Applied Soft Computing, 2017, 2018

Reviewer, International Journal of Electrical Power and Energy Systems, 2017

Reviewer, IEEE Systems Journal, 2017

PUBLICATIONS

Books & Research Monographs

Iyengar, Sundararaja S., Kianoosh G. Boroojeni. *Oblivious Network Routing: Algorithms and Applications. MIT Press*, 2015.

Iyengar, S. S., Kianoosh G. Boroojeni. *Mathematical Theory of Distributed Sensor Networks.* Springer, 2014.

Boroojeni, Kianoosh G., M. Hadi Amini, S. S. Iyengar. *Smart Grids: Security and Privacy Issues.* Springer, 2017.

Sniatala, Pawel, Amini, M. Hadi, Boroojeni, Kianoosh G. *Fundamentals of Brooks–Iyengar Distributed Sensing Algorithm: Trends, Advances, and Future Prospects.* Springer, 2020.

Edited Books

Amini, M. H., Boroojeni, K. G., Iyengar, S. S., Pardalos, P. M., Blaabjerg, F., & Madni, A. M. (2018). Sustainable Interdependent Networks II.

Amini, M. H., Boroojeni, K. G., Iyengar, S. S., Pardalos, P. M., Blaabjerg, F., & Madni, A. M. (2018). Sustainable Interdependent Networks, From Theory to Application.

Book Chapters

Amini, M. H., Bahrami, S., Kamyab, F., Mishra, S., Jaddivada, R., Boroojeni, K., ... & Xu, Y. (2018). Decomposition methods for distributed optimal power flow: panorama and case studies of the dc model. In Classical and recent aspects of power system optimization (pp. 137-155). Academic Press.

Amini, M. H., Boroojeni, K. G., Iyengar, S. S., Blaabjerg, F., Pardalos, P. M., & Madni, A. M. (2018). A panorama of future interdependent networks: From intelligent infrastructures to smart cities. In Sustainable interdependent networks (pp. 1-10). Springer, Cham.

Boroojeni, K. G., Amini, M. H., & Iyengar, S. S. (2017). End-user data privacy. In Smart grids: Security and privacy issues (pp. 85-92). Springer, Cham.

Boroojeni, K. G., Amini, M. H., & Iyengar, S. S. (2017). Bad data detection. In Smart Grids: Security and Privacy Issues (pp. 53-68). Springer, Cham.

Boroojeni, K. G., Amini, M. H., & Iyengar, S. S. (2017). Overview of the security and privacy issues in smart grids. In Smart grids: security and privacy issues (pp. 1-16). Springer, Cham.

Boroojeni, K. G., Amini, M. H., & Iyengar, S. S. (2017). Mobile user data privacy. In Smart grids: Security and privacy issues (pp. 93-110). Springer, Cham.

Boroojeni, K. G., Amini, M. H., & Iyengar, S. S. (2017). Reliability in smart grids. In Smart

Grids: Security and privacy issues (pp. 19-29). Springer, Cham.

Boroojeni, K. G., Amini, M. H., & Iyengar, S. S. (2017). Cloud network data security. In Smart Grids: Security and Privacy Issues (pp. 71-82). Springer, Cham.

Boroojeni, K. G., Amini, M. H., & Iyengar, S. S. (2017). Error Detection of DC Power Flow Using State Estimation. In Smart Grids: Security and Privacy Issues (pp. 31-51). Springer, Cham.

Iyengar, S. S., & Boroojeni, K. G. (2015). Routing Schemes in Oblivious Network Design. In oblivious Network Routing: Algorithms and Applications (pp. 31-51). MIT Press.

Iyengar, S. S., & Boroojeni, K. G. (2015). Hierarchical Routing Tools and Data Structures. In oblivious Network Routing: Algorithms and Applications (pp. 3-30). MIT Press.

Iyengar, S. S., & Boroojeni, K. G. (2015). A Secure Versatile Model of Content-Centric Networks. In oblivious Network Routing: Algorithms and Applications (pp. 54-73). MIT Press.

Iyengar, S. S., & Boroojeni, K. G. (2015). Versatile Distribution of Green Power Resources. In oblivious Network Routing: Algorithms and Applications (pp. 74-102). MIT Press.

Iyengar, S. S., Boroojeni, K. G., & Balakrishnan, N. (2014). Expectation–Maximization for Acoustic Source Localization. In Mathematical Theories of Distributed Sensor Networks (pp. 37-54). Springer, New York, NY.

Iyengar, S. S., Boroojeni, K. G., & Balakrishnan, N. (2014). Coverage Assessment and Target Tracking in 3D Domains. In Mathematical Theories of Distributed Sensor Networks (pp. 83-108). Springer, New York, NY.

Iyengar, S. S., Boroojeni, K. G., & Balakrishnan, N. (2014). Coordinate-Free Coverage in Sensor Networks via Homology. In Mathematical Theories of Distributed Sensor Networks (pp. 57-82). Springer, New York, NY.

Iyengar, S. S., Boroojeni, K. G., & Balakrishnan, N. (2014). Region-Guarding Problem in 3-D Areas. In Mathematical Theories of Distributed Sensor Networks (pp. 15-36). Springer, New York, NY.

Iyengar, S. S., Boroojeni, K. G., & Balakrishnan, N. (2014). Introduction to Distributed Sensor Networks. In Mathematical Theories of Distributed Sensor Networks (pp. 1-12). Springer, New York, NY.

Iyengar, Sundaraja S., K. G. Boroojeni, N. Balakrishnan, "A Stochastic Preserving Scheme of Location Privacy." *Mathematical Theories of Distributed Sensor Networks*. Springer New York, 2014. 111-145.

Peer-Reviewed Journals

Boroojeni, K. G., M. Hadi Amini, Shahab Bahrami, S. S. Iyengar, Arif I. Sarwat, and Orkun Karabasoglu, "A Novel Multi-Time-Scale Modeling for Electric Power Demand Forecasting: from Short-Term to Medium-Term Horizon," *Electric Power System Research* 142 (2017): 58-73.

Boroojeni, Kianoosh G., Boroojeni, K., Amini, M. H., Nejadpak, A., Dragicevic, T., Iyengar, S. S., & Blaabjerg, F. "A Novel Cloud-based Platform for Implementation of Oblivious Power Routing for Clusters of Microgrids," *IEEE Access* (2017): 607-619.

Boroojeni, K. G., Amini, M. H., Iyengar, S. S., Rahmani, M., & Pardalos, P. M. "An Economic Dispatch Algorithm for Congestion Management of Smart Power Networks: An Oblivious Routing Approach," *Energy Systems* (2016): 1-25.

Pramod, T. C., Boroojeni, K. G., Amini, M. H., Sunitha, N. R., & Iyengar, S. S. (2019). Key pre-distribution scheme with join leave support for SCADA systems. *International Journal of*

Critical Infrastructure Protection, 24, 111-125.

Boroojeni, K. G., Mokhtari, S., Amini, M. H., & Iyengar, S. S. "Optimal Two-Tier Forecasting Power Generation Model in Smart Grids," *International Journal of Information Processing* 8(2014): 79-88.

Peer-Reviewed Conference Proceedings

Thejas, G. S., Boroojeni, K. G., Chandna, K., Bhatia, I., Iyengar, S. S., & Sunitha, N. R. (2019, April). Deep Learning-based Model to Fight Against Ad Click Fraud. In Proceedings of the 2019 ACM Southeast Conference (pp. 176-181). ACM.

Guo, M., Boroojeni, K. G., Pissinou, N., Makki, K., Miller, J., & Iyengar, S. (2018, June). Query-Aware User Privacy Protection for LBS over Query-Feature-based Attacks. In 2018 IEEE Symposium on Computers and Communications (ISCC) (pp. 1-7). IEEE.

Alemán, C. S., Pissinou, N., Alemany, S., Boroojeni, K., Miller, J., & Ding, Z. (2018, March). Context-aware data cleaning for mobile wireless sensor networks: A diversified trust approach. In 2018 International Conference on Computing, Networking and Communications (ICNC) (pp. 226-230). IEEE.

Hoseinzadeh, B., Amini, M. H., Boroojeni, K. G., & Bak, C. L. (2018, June). RTDS Demonstration of Harmonic Amplification in Under Sea/Ground Cables of Offshore Wind Farms. In 2018 IEEE International Conference on Environment and Electrical Engineering and 2018 IEEE Industrial and Commercial Power Systems Europe (EEEIC/I&CPS Europe) (pp. 1-5). IEEE.

Amini, M. H., Boroojeni, K. G., Dragičević, T., Nejadpak, A., Iyengar, S. S., & Blaabjerg, F. (2017, September). Application of cloud computing in power routing for clusters of microgrids using oblivious network routing algorithm. In 2017 19th European Conference on Power Electronics and Applications (EPE'17 ECCE Europe) (pp. P-1). IEEE.

Amini, M. H., Boroojeni, K. G., Dragičević, T., Nejadpak, A., Iyengar, S. S., & Blaabjerg, F. (2017, June). A comprehensive cloud-based real-time simulation framework for oblivious power routing in clusters of DC microgrids. In 2017 IEEE Second International Conference on DC Microgrids (ICDCM) (pp. 270-273). IEEE.

Boroojeni, K. G., Amini, M. H., & Iyengar, S. S. "An Oblivious Routing-based Power Flow Calculation Method For Loss Minimization of Smart Power Networks: A Theoretical Perspective," *Machine Learning and Applications, 2016 IEEE International Conference on.* IEEE, 2016.

Amini, M. H., Boroojeni, K. G., Wang, C. J., Nejadpak, A., Iyengar, S. S., & Karabasoglu, O."Effect of Electric Vehicle Parking Lots' Charging Demand as Dispatchable Loads on Power Systems Loss," *Electro Information Technology (EIT), 2016 IEEE International Conference on.* IEEE, 2016.

Boroojeni, K. G., Amini, M. H., Nejadpak, A., Iyengar, S. S., Hoseinzadeh, B., & Bak, C. L. "A theoretical bilevel control scheme for power networks with large-scale penetration of distributed renewable resources." 2016 IEEE international conference on electro information technology (EIT). ieee, 2016.

Liu, G., Amini, M. H., Boroojeni, K. G., Nejadpak, A., & Iyengar, S. S. (2016, May). Best practices for online marketing in twitter: an experimental study. In 2016 IEEE International Conference on Electro Information Technology (EIT) (pp. 0504-0509). IEEE.

Amini, M. H., Rahmani, M., Boroojeni, K. G., Atia, G., Iyengar, S. S., & Karabasoglu, O. (2016, May). Sparsity-based error detection in DC power flow state estimation. In 2016 IEEE International Conference on Electro Information Technology (EIT) (pp. 0263-0268). IEEE.

Amini, M. H., Karabasoglu, O., Ilic, M. D., Boroojeni, K. G., & Iyengar, S. S. (2015, July). Arima-based demand forecasting method considering probabilistic model of electric vehicles' parking lots.

In 2015 IEEE Power & Energy Society General Meeting (pp. 1-5). IEEE.

Amini, M. H., Karabasoglu, O., Ilic, M. D., Boroojeni, K. G., & Iyengar, S. S. (2015). Charging demand prediction of electric vehicles parking lots utilizing auto-regressive integrated moving average model. In IEEE PES general meeting 2015 (pp. 26-30).

Boroojeni, K. G., Mokhtari, S., & Iyengar, S. S. (2014). A Hybrid Model for Forecasting Power Demand and Generation in Smart Grids. ICCN Proceedings, 1-9.

COMPUTER SKILLS
- Programming Languages: C, C++, Java, Python.
- Statistical Analysis Tools: R, Matlab, Stata, MS Excel.
- Video recording applications like "Explain Everything" and Microsoft PowerPoint.
- Document Editing Tools: LaTeX, MS Word, & Adobe Acrobat Pro.
- Operating Systems: Unix/Linux, Windows.