

## Kianoosh G. Boroojeni, Ph.D.

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### CONTACT INFORMATION

CASE 380  
School of Comp. & Info. Sciences  
Florida International University  
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U.S. Permanent Resident

### RESEARCH INTERESTS

Cyber-security, Machine Learning, STEM Education and Computer Networks  
(Authored 50+ scientific publications; 860+ Google scholar citations; h-index: 16)

### EDUCATION

**Florida International University**, Miami, Florida USA

Ph.D., Computer Science, April 2017.

M.S., Computer Science, May 2016

**University of Tehran**, Tehran, Iran

B.Eng., Computer Engineering, July 2012

### EXPERIENCE

**Florida International University**, Miami, Florida USA

**Assistant Teaching Professor/ Former Visiting Instructor** August, 2017 - Present

- Taught 14 different undergraduate courses one CS PhD core course & 3 graduate-level courses
- Consistently achieved excellent/very-good teaching evaluations
- 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

**Post-Doctoral Fellow**

**Summer 2017 & Summer 2018**

- 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

**Graduate Assistant**

**2016 - Spring 2017**

- Served as a research associate for the Director of the School
- Provided academic support and instruction to students and faculty
- Collaborated with researchers from Carnegie Mellon University and British Columbia University

## Graduate Teaching Assistant

2012 - 2016

- 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 and led discussion sections
- Planned, designed and developed assignments
- Provided tutoring, mentoring, or assistance to students

COURSES TAUGHT **Face-to-Face, Remote, Hybrid and Online Classes** Total of 18 different courses in 60+ sections including a PhD core course, and three grad-level courses:

Computer Programming II & Data Structures (COP 3337 & COP3530): several sections Summer-C 2018, Summer-C 2019, Fall 2019, Fall 2020, Summer 2020, Spring 2021, & Summer 2021

Systems Programming (COP 4338): several sections in Summer-C 2018, Summer-A 2019, Spring 2020, Summer-C 2020, Summer-C 2021, & Fall 2021

Discrete Structures (COT 3100): several sections in Fall 2017, Spring 2018, Fall 2018, Spring 2019, Summer-B 2019, & Fall 2019

Theory of Computation I (COT 5310): Fall 2020, & Fall 2021

Principles of Cybersecurity (CIS 5370): Fall 2021

Net-centric Computing (CNT 4713): Spring 2019 & Spring 2020

Operating Systems Principles (COP 4610): Fall 2019, Fall 2020, Spring 2021, & Summer 2021

Advanced Programming Courses: Advanced Windows Programming (COP 4226) in Fall 2020 & Fall 2021, Principles of Programming Languages (COP 4555) in Fall 2020, Advanced Computer Graphics with OpenGL (CAP 4710, CAP 5701) in Spring 2021

Other Programming Courses: Java Programming (COP2250), Programming I (COP2210), & Intermediate Java Programming (COP3804)

Structured Computer Organization (CDA 4101): Fall 2019, & Spring 2020

Computer Architecture (CDA 3102): Summer-C 2021, & Fall 2021

Computer Communications & Networking (TCN 5030): Fall 2018, Summer-C 2019, Summer-C 2020, Summer-C 2021

ONLINE TEACHING Redesigned courses COP3337, CNT4713, and TCN5030 to receive Quality Matters (QM) Certifications. Received QM Certificate for COP337, others are under process.

Prepared and recorded 50+ 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 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 and Applications” 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<sup>st</sup> 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., Dragicovic, 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). iee, 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.