

Cristian Borcea - Curriculum Vitae

Department of Computer Science
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Education

- Ph.D.** Computer Science, Rutgers University, New Jersey, USA 2004
- M.S.** Computer Science, Rutgers University, New Jersey, USA 2002
- M.S.** Computer Science, University Politehnica, Bucharest, Romania 1997
- B.S.** Computer Science, University Politehnica, Bucharest, Romania 1996

Academic Appointments

- **Professor** Department of Computer Science, New Jersey Institute of Technology (2016 -)
- **Visiting Professor** National Institute of Informatics, Tokyo, Japan (2012 -)
- **Associate Professor** Department of Computer Science, New Jersey Institute of Technology (2009 - 2016)
- **Assistant Professor** Department of Computer Science, New Jersey Institute of Technology (2004 - 2009)

Academic Leadership Appointments

- **Associate Dean for Strategic Initiatives** Ying Wu College of Computing (YWCC), New Jersey Institute of Technology (2020 - 2024)
- **Chair** Department of Computer Science, New Jersey Institute of Technology (2015 - 2018)
- **Associate Chair** Department of Computer Science, New Jersey Institute of Technology (2012 - 2015)

Current Research Interests

Distributed Machine Learning; Mobile Computing and Sensing; Online Privacy; Computational Advertising.

Publications in the Past 5 Years

• Refereed Journal Articles

- [1] X. Jiang, H. Hu, T. On, P. Lai, V. Mayyuri, A. Chen, D. Shila, A. Larmuseau, R. Jing, C. Borcea, N. Phan, "FLSys: Toward an Open Ecosystem for Federated Learning Mobile Apps," IEEE Transactions on Mobile Computing, Vol. 23, No. 1, 2024.
- [2] S. Zhao, M. Chen, C. Borcea, Y. Chen, "Personalized Dynamic Counter Ad-

Blocking Using Deep Learning,” IEEE Transactions on Knowledge and Data Engineering, Vol. 35, No. 8, 2023. 2

- [3] X. Shang, W. Jia, J. Shan, X. Ding, C. Borcea, “Reestablishing Page Placement Mechanisms for Nested Virtualization,” IEEE Transactions on Cloud Computing, Vol. 11, No. 3, 2023.
- [4] A. Hakeem, R. Curtmola, X. Ding, and C. Borcea, “DFPS: A Distributed Mobile System for Free Parking Assignment,” IEEE Transactions on Mobile Computing, Vol. 21, No. 12, 2022.
- [5] I. Sandu Popa, D. H. Ton That, K. Zeitouni, C. Borcea, “Mobile Participatory Sensing with Strong Privacy Guarantees Using Secure Probes,” Springer GeoInformatica, Vol. 25, 2021.
- [6] Chang Guo, Demin Li, Guanglin Zhang, Xiaoning Ding, Reza Curtmola, and Cristian Borcea, “Dynamic Interior Point Method for Vehicular Traffic Optimization,” IEEE Transactions on Vehicular Technology, Vol. 69, No. 5, May 2020.
- [7] N. Paiker, J. Shan, C. Borcea, N. Gehani, R. Curtmola, X. Ding. “Design and Implementation of an Overlay File System for Cloud-Assisted Mobile Apps”. IEEE Transactions on Cloud Computing, Vol. 8, No. 1, March 2020.

• **Refereed Conference Papers**

- [8] P. Sen and C. Borcea, “FedMTL: Privacy-Preserving Federated Multi-Task Learning,” The 27th European Conference on Artificial Intelligence (ECAI), October 2024.
- [9] T. K. Ton, N. Nguyen, M. Nazzal, A. Khreishah, C. Borcea, H. Phan, R. Jin, I. Khalil,
- [10] Y. Shen, “SGCode: A Flexible Prompt-Optimizing System for Secure Generation of Code,” Demo Abstract. The 31st ACM Conference on Computer and Communications Security (CCS), October 2024.
- [11] M. Smith, A. Torres, R. Grossman, P. Sen, Y. Chen, C. Borcea, “A Study of GDPR Compliance under the Transparency and Consent Framework,” The 2024 ACM Web Conference (WWW), May 2024.
- [12] A. Kalra, C. Wang, C. Borcea, Y. Chen, “Reserve Price Optimization in First-Price Auctions via Multi-Task Learning,” 23rd IEEE International Conference on Data Mining (ICDM 2023), December 2023.
- [13] P. Sen, X. Jiang, Q. Wu, M. Talasila, W.-L. Hsu, C. Borcea, “GoPlaces: An App for Personalized Indoor Place Prediction,” The 20th IEEE International Conference on Mobile Ad-Hoc and Smart Systems (MASS 2023), September 2023.
- [14] X. Jiang, T. Oh, N. Phan, H. Mohammadi, V. Mayyuri, A. Chen, R. Jin, C. Borcea, “Zone-based Federated Learning for Mobile Sensing Data,” The 21st IEEE International Conference on Pervasive Computing and Communications (PerCom 2023), March 2023.
- [15] X. Jiang, C. Borcea, “Complement Sparsification: Low-Overhead Model Pruning for Federated Learning,” The 37th AAAI Conference on Artificial Intelligence, February 2023.

- [16] P. Sen, X. Jiang, Q. Wu, M. Talasila, W.-L. Hsu, C. Borcea, “Indoor Place Prediction on Smart Phones,” Demo Abstract. The 20th ACM Conference on Embedded Networked Sensor Systems (SenSys 2022), November, 2022.
- [17] X. Jiang, S. Zhao, G. Jacobson, R. Jana, W-L. Hsu, M. Talasila, S. A. Aftab, Y. Chen, and C. Borcea, “Federated Meta-Location Learning for Fine-Grained Location Prediction,” IEEE International Conference on Big Data (IEEE BigData 2021), December 2021.
- [18] S. Zhao, R. Bharati, C. Borcea, and Y. Chen, “Privacy-Aware Federated Learning for Page Recommendation,” IEEE International Conference on Big Data (IEEE BigData 2020), December 2020.
- [19] S. Zhao, X. Jiang, G. Jacobson, R. Jana, W-L. Hsu, R. Rustamov, M. Talasila, S. A. Aftab, Y. Chen, and C. Borcea, “Cellular Network Traffic Prediction Incorporating Handover: A Graph Convolutional Approach,” The 17th Annual IEEE International Conference on Sensing, Communication and Networking (SECON), June 2020.
- [20] S. Zhao, A. Kalra, C. Borcea, and Y. Chen, “To be Tough or Soft: Measuring the Impact of Counter-Ad-blocking Strategies on User Engagement,” The Web Conference (WWW), April 2020.

• Book Chapters

- [21] X. Jiang, H. Mohammadi, C. Borcea, N. Phan, “ZoneFL: Zone-based Federated Learning at the Edge,” Book chapter in the “Handbook of Trustworthy Federated Learning”, Springer International Publishing, ISBN 9783031589225, 2024.

Patents

- [1] M. Talasila, A. S. Aftab, W.-L. Hsu, C. Borcea, Y. Chen, X. Jiang, S. Zhao, G. Jacobson, R. Jana, “Artificial Intelligence Automation to Improve Network Quality Based on Predicted Locations.” Patent No. US 11,848,828 B1, 2023.
- [2] G. Xu, C. Borcea, L. Iftode, “Method and System for Policy Enforcement in Trusted Ad Hoc Networks.” Patent No. US 10,693,853 B2, 2020.

Recent Invited Talks

- [1] “Federated Learning for Mobile and IoT Devices,” Shanghai Normal University, December 2023.
- [2] “Federated Learning for Mobile and IoT Devices,” National Institute of Informatics, Tokyo, Japan, November 2023.
- [3] “Federated Learning for Mobile Sensing Data,” Keynote talk at the 2021 IEEE International Congress on Intelligent and Service-Oriented Systems Engineering (CISOSE), August 2021.
- [4] “Federated Learning for Mobile Sensing Data,” Keynote talk at 22nd IEEE International Conference on Mobile Data Management (MDM’21), June 2021.

Student Advisement

- Graduated 12 Ph.D. students and 30+ M.S. students