Balaji Palanisamy
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Appointments

- **Associate Professor**
  Department of Informatics & Networked Systems, School of Computing & Information, University of Pittsburgh   *2019 - present*
- **Affiliate Scholar**
  University of Pittsburgh Institute for Cyber Law, Policy, and Security   *2017 - present*
- **Assistant Professor**
  School of Computing and Information, University of Pittsburgh   *2013 - 2019*

Administrative Appointments

- **Associate Chair**
  Department of Informatics & Networked Systems, School of Computing & Information, University of Pittsburgh   *2022 - present*
- **Director of Graduate Studies**
  Department of Informatics & Networked Systems, School of Computing & Information, University of Pittsburgh   *2019 - present*

Research Interests

- Blockchains, Data Privacy, Networked & Distributed Systems, Cloud & Edge Computing and IoT Infrastructures

Education

- **Georgia Institute of Technology**   Atlanta, GA
  Ph.D. in Computer Science   *Aug. 2008 - Aug. 2013*
- **Georgia Institute of Technology**   Atlanta, GA
  M.S. in Computer Science   *Dec. 2009*
- **Pondicherry Engineering College**   Pondicherry, India
  B.Tech. in Computer Science   *June 2006*
  - Ranked 1st in a class of 64

Honors/Awards

- Distinguished Paper Award, 30th ACM Conference on Computer and Communications Security, CCS 2023

- Best Paper Award, 36th Annual IFIP WG 11.3 Conference on Data and Applications Security and Privacy, DBSec 2022

- Best Paper Award Nominee, 29th IEEE International Conference on High Performance Computing, Data, and Analytics, HiPC 2021

- Best Paper Award, 7th International Congress on Big Data, BigData Congress 2018

- IBM Faculty Award 2017

- Best Paper Award, 6th IEEE International Congress on Big Data, IEEE BigData Congress 2017

- Faculty Honoree in the 2016 and 2017 Honors Convocation at the University of Pittsburgh

- Best Paper Award, 15th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing, IEEE/ACM CCGrid 2015

- Best Paper Award, 5th International Conference on Cloud Computing, IEEE Cloud 2012

- First Patent Application Invention Achievement Award, IBM Research 2012

- IBM Research PhD Fellowship 2012-2013

- Best Paper Award, 18th International Conference on Advanced Computing and Communications, ADCOM 2006

- Best Undergraduate Thesis Award, 2006

- Tata Consultancy Services Best Project Award, 2006

Publications

Journal Publications

1. Jingzhe Wang, Balaji Palanisamy, "Securing Blockchain-based Timed Data Release against Adversarial Attacks", in *Journal of Computer Security, JCS 2023*

2. Jinlai Xu, Balaji Palanisamy, Qingyang Wang, Heiko Ludwig, Sandeep Gopisetty, "Amnis: Optimized stream processing for edge computing", in *Journal of Parallel and Distributed Computing, JPDC 2022*

3. Chao Li, Balaji Palanisamy, "SilentDelivery: Practical Timed-Delivery of Private Information Using Smart Contracts", in *IEEE Trans. Serv. Computing, IEEE TSC 2022*

4. Jinlai Xu and Balaji Palanisamy, "Optimized Contract-based Model for Resource Allocation in Federated Geo-distributed Clouds", in *IEEE Transactions on Services Computing, IEEE TSC 2021* .

5. Yang Zhou, Ling Liu, Kisung Lee, Balaji Palanisamy, Qi Zhang, "Improving Collaborative Filtering with Social Influence over Heterogeneous Information Networks", in Proc. of *ACM Transactions on Internet Technology, ACM TOIT 2020*

6. Qingyang Wang, Shungeng Zhang, Yasuhiko Kanemasa, Calton Pu, Balaji Palanisamy, Lilian Harada, Motoyuki Kawaba, "Optimizing N-Tier Application Scalability in the Cloud: A Study of Soft Resource Allocation", in *ACM Transactions on Modeling and Performance Evaluation of Computing Systems, ACM TOMPECS 2019*.

7. Chao Li, Balaji Palanisamy, "Reversible Location Perturbation Mechanisms for Protecting Multi-level Location Privacy", in *Elsevier Computer Communications 2019*

8. Qingyang Wang, Hui Chen, Shungeng Zhang,, Liting Hu, Balaji Palanisamy, "Integrating Concurrency Control in n-Tier Application Scaling Management in the Cloud", in *IEEE Transactions on Parallel and Distributed Systems, IEEE TPDS 2019*.

9. Chao Li and Balaji Palanisamy, "Privacy in Internet of Things: from Principles to Technologies", in *IEEE Internet of Things Journal, IEEE IoT-J 2018*.

10. Lei Jin, Chao Li, Balaji Palanisamy and James Joshi, "k-Trustee: Location Injection Attack-resilient Anonymization for Location Privacy", in *Elsevier Computers & Security 2018*.

11. Balaji Palanisamy, Ling Liu, Yang Zhou and Qingyang Wang, "Privacy-preserving Publishing of Multi-level Utility Controlled Graph Datasets", in *ACM Transactions on Internet Technology, ACM TOIT 2018*.

12. Nathalie Baracaldo, Balaji Palanisamy and James Joshi, "G-SIR: An Insider Attack Resilient Geo-Social Access Control System", in *IEEE Transactions on Secure and Dependable Computing, IEEE TDSC 2018*.

13. Kisung Lee, Ling Liu, Balaji Palanisamy and Emre Yigitoglu,"Road Network-Aware Spatial Alarms", in *IEEE Transactions on Mobile Computing, IEEE TMC 2016*.

14. Qiulei Guo, Balaji Palanisamy, Hassan Karimi and Leming Zhang , "Distributed Algorithms for Spatial Retrieval Queries in Geospatial analysis", in *Services Transactions on Cloud Computing, STCC 2016*.

15. Balaji Palanisamy and Ling Liu, "Attack-resilient Mix-zones over Road Networks: Architecture and Algorithms"', in *IEEE Transactions on Mobile Computing, IEEE TMC 2015*.

16. Balaji Palanisamy, Aameek Singh and Ling Liu, "Cost-effective Resource Management for MapReduce in a Cloud," in *IEEE Transactions on Parallel and Distributed Systems, IEEE TPDS 2015*.

17. Balaji Palanisamy, Ling Liu, Kisung Lee, Shicong Meng, Yuzhe Tang and Yang Zhou, "Delay-tolerant Mix-zones on Road Networks", in *Distributed and Parallel Databases , DAPD 2014*.

18. Balaji Palanisamy and Ling Liu, "Effective Mix-zone Anonymization for Mobile Travelers", in *Geoinformatica 2014*.

Conference Publications

19. Chao Li, Balaji Palanisamy, Runhua Xu, Li Duan, Jiqiang Liu, Wei Wang, " How Hard is Takeover in DPoS Blockchains? Understanding the Security of Coin-based Voting Governance", in Proc. of *Proc. of The 30th ACM Conference on Computer and Communications Security , CCS 2023* (**Received Distinguished Paper Award**)

20. Chao Li, Balaji Palanisamy, Runhua Xu, Li Duan, " Cross-Consensus Measurement of Individual-level Decentralization in Blockchain", in Proc. of *Proc. of The 9th International Conference on Big Data Security on Cloud, BigDataSecurity, BigDataSecurity 2023*

21. Jingzhe Wang, Balaji Palanisamy, " CTDRB: Controllable Timed Data Release Using Blockchains", in Proc. of *The 18th EAI International Conference on Security and Privacy in Communication NetworkACM SecureComm 2022*

22. Jinlai Xu, Balaji Palanisamy, Qingyang Wang, Heiko Ludwig, Sandeep Gopisetty, " Decentralized Allocation of Geo-distributed Edge Resources using Smart Contracts", in Proc. of *The 22 st IEEE/ACM international Symposium on Cluster, Cloud and Internet Computing , IEEE/ACM CCGrid 2022*

23. Jingzhe Wang, Balaji Palanisamy, "Attack-Resilient Blockchain-Based Decentralized Timed Data Release", in Proc. of *36th Annual IFIP WG 11.3 Conference on Data and Applications Security and Privacy, DBSec 2022* (**Received Best Paper Award**)

24. Ritik Kumar, Balaji Palanisamy, Shamik Sural, " Efficient Blockchain Enabled Attribute-based Access Control as a Service", in Proc. of *The 4th IEEE International Conference on Trust, Privacy and Security in Intelligent Systems, and Applications, IEEE TPS-ISA 2022*

25. Akshay Madan, David Tipper, Balaji Palanisamy, Mai Abdelhakim and Prashant Krishnamurthy, " BECT: Beacon-based Contact Tracing for Detecting Direct & Indirect Contacts", in Proc. of *The 19th IEEE International Conference on Mobile Ad-Hoc and Smart Systems, IEEE MASS 2022*

26. Muthukur Venkata Akhil Vasishta, Balaji Palanisamy, Shamik Sural, "Decentralized Authorization using Hyperledger Fabric", in Proc. of *2022 IEEE International Conference on Blockchain, Blockchain 2022*

27. Maddipati Varun, Balaji Palanisamy, Shamik Sural, "Mitigating Frontrunning Attacks in Ethereum", in Proc. of *The 4th ACM International Symposium on Blockchain and Secure Critical Infrastructure, BSCI 2022*

28. Somay Chopra, Balaji Palanisamy, Shamik Sural, "Credit-based Peer-to-Peer Ride Sharing using Smart Contracts", in Proc. of *IEEE International Conference on Blockchain and Cryptocurrency, IEEE ICBC 2022*

29. Jingzhe Wang, Balaji Palanisamy, "Protecting Blockchain-based Decentralized Timed release of Data from Malicious Adversaries", in Proc. of *IEEE International Conference on Blockchain and Cryptocurrency, IEEE ICBC 2022*

30. Jinlai Xu and Balaji Palanisamy, "Cost-aware & Fault-tolerant Geo-distributed Edge Computing for Low-latency Stream Processing", in Proc. of *The 7th IEEE International Conference on Collaboration and Internet Computing, IEEE CIC 2021*

31. Jinlai Xu and Balaji Palanisamy, "Model-based Reinforcement Learning for Elastic Stream Processing in Edge Computing", in Proc. of *29th IEEE International Conference on High Performance Computing, Data, and Analytics, HiPC 2021* (**Best Paper Award Nominee**)

32. Maddipati Varun, Muthukur Venkata Akhil Vasishta, Balaji Palanisamy and Shamik Sural, "Decentralized Authorization in Web Services Using Public Blockchain", in Proc. of *2021 International Conference on Blockchain, ICBC 2021*

33. Ritik Kumar, Balaji Palanisamy and Shamik Sural, "BEAAS: Blockchain Enabled Attribute-Based Access Control as a Service" in Proc. of *IEEE International Conference on Blockchain and Cryptocurrency, IEEE ICBC 2021*

34. Jinlai Xu, Balaji Palanisamy and Qingyang Wang , "Resilient Stream Processing in Edge Computing", in Proc. of *The 21st IEEE/ACM international Symposium on Cluster, Cloud and Internet Computing , IEEE/ACM CCGrid 2021*

35. Chao Li, Balaji Palanisamy, Runhua Xu, Jinlai Xu and Jingzhe Wang, "SteemOps: Extracting and Analyzing Key Operations in Steemit Blockchain based Social Media Platform" in Proc. of *ACM Conference on Data and Application Security and Privacy, CODASPY 2021*

36. Chao Li, Balaji Palanisamy, "Comparison of Decentralization in DPoS and PoW Blockchains", in Proc. of *2020 International Conference on Blockchain, ICBC 2020*

37. Chao Li, Balaji Palanisamy, "EventWarden: A Decentralized Event-driven Proxy Service for Outsourcing Arbitrary Transactions in Ethereum-like Blockchains", in Proc. of *2020 IEEE International Conference on Web Services, IEEE ICWS 2020*

38. Jingzhe Wang, Balaji Palanisamy and Jinlai Xu, "Sustainability-aware Resource Provisioning in Data Centers" , in Proc. of *The 6th IEEE International Conference on Collaboration and Internet Computing, IEEEE CIC 2020*

39. Chao Li, Balaji Palanisamy, Runhua Xu, Jian Wang and Jiqiang Liu, "NF-Crowd: Nearly-free Blockchain-based Crowdsourcing", in Proc. of *The 39th International Symposium on Reliable Distributed Systems, SRDS 2020*)

40. Chao Li and Balaji Palanisamy, "Incentivized Blockchain-based Social Media Platforms: A Case Study of Steemit", in Proc. of *11th ACM International Web Science Conference, ACM WebSci 2019*

41. Balaji Palanisamy and Chao Li, "Self-emerging Data Infrastructures", in Proc. of *5th IEEE International Conference on Collaboration and Internet Computing, IEEE CIC 2019*

42. Yang Zhou, Ling Liu, Qi Zhang, Kisung Lee, Balaji Palanisamy, "Enhancing Collaborative Filtering with Multi-label Classification", in Proc. of *8th International Conference on Computational Data and Social Networks, CSoNet 2019*

43. Chao Li and Balaji Palanisamy, "Decentralized Privacy-preserving Timed Execution in Blockchain-based Smart Contract Platforms", in Proc. of *25th IEEE International Conference on High Performance Computing, Data, and Analytics, HiPC 2018*

44. Chao Li and Balaji Palanisamy, "Decentralized Release of Self-emerging Data using Smart Contracts", in Proc. of *37th IEEE International Symposium on Reliable Distributed Systems, IEEE SRDS 2018*

45. Chao Li, Balaji Palanisamy and Prashant Krishnamurthy, "Reversible Data Perturbation Techniques for Multi-level Privacy-preserving Data Publication", in *7th International Congress on Big Data, BigData Congress 2018, Seattle, USA.* (**Received Best Paper Award**)

46. Runhua Xu, Balaji Palanisamy, James Joshi, "QueryGuard: Privacy-preserving Latency-aware Query Optimization for Edge Computing" in *the 17th IEEE International Conference On Trust, Security And Privacy In Computing And Communications, IEEE TrustCom 2018.*

47. K. Areekijseree, Yuzhe Tang, Ju Chen, Shuang Wang, Arun Iyengar and Balaji Palanisamy, "Secure and Efficient Multi-Party Directory Publication for Privacy-Preserving Data Sharing", in *2018 International Conference on Security and Privacy in Communication Networks, SecureComm 2018, Singapore*.

48. Balaji Palanisamy, Chao Li and Prashant Krishnamurthy, "Group Differential Privacy Preserving Publishing of Multi-level Graph Datasets", in *2017 IEEE International Conference on Big Data, IEEE Big Data, Boston, USA.*

49. Jinlai Xu, Balaji Palanisamy, Yuzhe Tang and S.D. Madhu Kumar, "PADS: Privacy-preserving Auction Design for Allocating Dynamically Priced Cloud Resources" in Proc. of *3rd International Conference on Collaboration and Internet Computing, IEEE CIC 2017, San Jose, USA*

50. Chao Li and Balaji Palanisamy, "Emerge: Self-emerging Data Release using Cloud Data Storage", in Proc. of *10th IEEE International Conference on Cloud Computing, IEEE CLOUD 2017, Honolulu, USA.*

51. Jinlai Xu and Balaji Palanisamy, "Cost-aware resource management for federated clouds using resource sharing contracts?, in Proc. of *10th IEEE International Conference on Cloud Computing, IEEE CLOUD 2017, Honolulu, USA.*

52. Jinlai Xu and Balaji Palanisamy, Heiko Ludwig, and Qingyang Wang,"Zenith: Utility-aware Resource Allocation for Edge Computing?, in Proc. of *1st IEEE International Conference on Edge Computing, IEEE EDGE 2017, Honolulu, USA.*

53. Chao Li, Balaji Palanisamy and James Joshi, "Differentially Private Trajectory Analysis for Points-of-Interest Recommendation", in Proc. of *6th IEEE International Congress on Big Data (*BigData Congress 2017), Honolulu, USA. (**Received Best Paper Award**)

54. Chao Li and Balaji Palanisamy,"Timed-release of Self-emerging Data using Distributed Hash Tables", in Proc. of *37th IEEE International Conference on Distributed Computing Systems, ICDCS 2017, Atlanta, USA.*

55. Hui Chen, Qingyang Wang, Balaji Palanisamy, and Pengcheng Xiong, "DCM: Dynamic Concurrency Management for Scaling n-Tier Applications in Cloud?, in Proc. of *37th International Conference on Distributed Computing Systems, ICDCS 2017, Atlanta, GA, USA.*

56. Chao Li, Balaji Palanisamy and James Joshi, "SocialMix: Privacy-aware Communication in Online Social Networks", in *23rd IEEE International Conference on Web Services, ICWS 2016*, San Francisco, USA.

57. Chao Li and Balaji Palanisamy, "ReverseCloak: Protecting Multi-level Location Privacy over Road Networks", in *24th ACM International Conference on Information and Knowledge Management,CIKM 2015*, Melbourne, Australia.

58. Chao Li and Balaji Palanisamy, "De-anonymizable Location Cloaking for Privacy-controlled Mobile Systems", in *9th International Conference on Network and System Security, NSS 2015*, New York, USA.

59. Yuzhe Tang, Arun Iyengar, Wei Tan, Liana Fong, Ling Liu, Balaji Palanisamy, "Lightweight Indexing for Log-Structured Key-Value Stores", in *14th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing, IEEE/ACM CCGrid 2015*, Shenzhen, Guangdong, China, 2015. (**Received Best Paper Award)**

60. Qiulei Quo, Balaji Palanisamy and Hassan Karimi, "A Distributed Polygon Retrieval Algorithm using MapReduce", in *International Symposium on Spatio-temporal Computing, Fairfax, Virginia, USA, ISSC 2015* .

61. Balaji Palanisamy and Ling Liu, "Privacy-preserving Data Publishing in the Cloud: A Multi-level Utility Controlled Approach", in *8th IEEE International Conference on Cloud Computing, New York, USA, IEEE CLOUD 2015*.

62. Qiulei Quo, Balaji Palanisamy and Hassan Karimi, "A MapReduce Algorithm for Polygon Retrieval in Geospatial Analysis", in *8th IEEE International Conference on Cloud Computing, New York, USA, IEEE CLOUD 2015* .

63. Yang Zhou, Ling Liu, Xianqiang Bao, Kisung Lee, Calton Pu, Balaji Palanisamy, Emre Yigitoglu, Qi Zhang, "Clustering Service Networks with Entity, Attribute and Link Heterogeneity" in *22nd IEEE International Conference on Web Services (IEEE ICWS 2015), New York, USA.*

64. Nathalie Baracaldo, Balaji Palanisamy and James Joshi, "Geo-Social-RBAC: A Location-based Socially Aware Access Control Framework", in *8th International Conference on Network and System Security, NSS 2014*), Xi'an, China.

65. Balaji Palanisamy, Aameek Singh, Nagapramod Mandagere, Gabriel Alatore and Ling Liu, "MapReduce Analysis for Cloud-archived Data", in *14th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing, IEEE/ACM CCGrid 2014 , Chicago, IL, USA.*

66. Balaji Palanisamy, Sheldon Sensenig, James Joshi and Rose Constantino, "LEAF:A Privacy-conscious Social Network-based Intervention Tool for IPV Survivors", in *15th IEEE International Conference on Information Reuse and Integration, IRI 2014 , San Franscisco, USA.*

67. Balaji Palanisamy, Aameek Singh, Ling Liu and Bryan Langston, "Cura: A Cost-Optimized Model for MapReduce in a Cloud." in *27th IEEE International Parallel and Distributed Processing Symposium, IPDPS 2013*, Boston, Massachusetts, USA.

68. Shicong Meng, Arun Iyengar, Isabelle Rouvellou, Ling Liu, Kisung Lee, Balaji Palanisamy and Yuzhe Tang, "Reliable State Monitoring with Messaging Quality Awareness," *in Proceedings of IEEE International Conference on Cloud Computing, IEEE Cloud 2012*, Honolulu, Hawaii, June 2012 **(Received Best Paper Award)**.

69. Kisung Lee, Ling Liu, Shicong Meng, Balaji Palanisamy, "Road Network Aware Spatial Alarm Processing," *in Proceedings of IEEE International Conference on Web Services, ICWS 2012*, Honolulu, Hawaii, June 2012.

70. Balaji Palanisamy, Ling Liu, Kisung Lee, Aameek Singh and Yuzhe Tang, "Location Privacy with Road Network Mix-zones," *in Proceedings of the 8th IEEE International Conference on Mobile Ad-hoc and Sensor Network, MSN 2012*, Chengdu, China, December 2012.

71. Balaji Palanisamy and Ling Liu, "Protecting Location Privacy with Mix-zones over Road Networks," *in Proceedings of the 27th IEEE International Conference on Data Engineering, ICDE 2011*, Hannover, Germany, April 2011.

72. Balaji Palanisamy, Aameek Singh, Ling Liu and Bhushan Jain, "Purlieus: Locality-aware Resource Allocation for MapReduce in a Cloud," *in Proceedings of ACM/IEEE Supercomputing, SC 2011*, Seattle, November 2011.

73. Yuzhe Tang, Ting Wang, Ling Liu, Shicong Meng, Balaji Palanisamy, "Privacy-Preserving Indexing for e-Health information networks, " *in Proceedings of 20th ACM Conference on Information and Knowledge Management, CIKM 2011*, Glasgow, October 2011.

74. Balaji Palanisamy, T.Siva Prasad, and N.Sreenath, "Traffic Adaptive Wavelength Routing in IP-Over-WDM Networks," *in Proceedings of the 14th International conference on Advanced Computing and Communications, ADCOM 2006*, Surathkal, December 2006. **(Received Best Paper Award)**

75. N.Sreenath and Balaji Palanisamy, "An Online Distributed Protocol for the Restoration of Connectivity in the Virtual topology after Link failure in IP over WDM networks",*in Proceedings of the International conference on Networking and Services, ICNS 2006*, Santa Clara, July 2006.

76. Balaji Palanisamy, "Peertalk: A Secure, Fully Decentralized Peer-to-peer Instant Messaging System", *in Proceedings of the International Conference on Information Security, ICIS 2005*, Pondicherry, December 2005.

77. N.Sreenath and Balaji Palanisamy, "A Two-Phase Distributed Reconfiguration Algorithm for Node Failures in IP-Over-WDM Networks",*in the Proceedings of the International Conference on Systems and Networks Communication, ICSNC 2006*, French Polyneshia, November 2006.

78. N.Sreenath , Balaji Palanisamy, and S.R.Nadarajan, "Grooming of Multicast Sessions in Sparse Splitting WDM Mesh Networks using Virtual Source Based Trees", *in the Proceedings of the International Conference on Systems and Networks Communication, ICSNC 2006*, French Polyneshia, November 2006.

79. N.Sreenath, N.Devendra, and Balaji Palanisamy, "Dynamic Routing of Reliability-differentiated services in Optical Burst-Switched Networks", *in Proceeding of "Modeling Complexity in a Distributed World"', The Indian Institute of Science Centenary Conference, MCDES 2008*, Bangalore, May 2008.

Workshop Publications

80. Leila Karimi, Balaji Palanisamy and James Joshi, "A Dynamic Privacy Aware Access Control Model for Location Based Services", in *1st International Workshop on Privacy in Collaborative & Social Computing, PICSoC 2016*, Pittsburgh, USA

81. Priyanka Prabhu, Shamkant B. Navathe, Stephen Tyler, Venu Dasigi, Neha Narkhede, Balaji Palanisamy, "LITSEEK: Public health literature search by metadata enhancement with External knowledge bases, " *in workshop of 19th ACM Conference on Information and Knowledge Management, CIKM 2009*, Hong Kong, China, November, 2009 .

82. Hardik Vasa, Anirudh Vasudevan and Balaji Palanisamy, "Link Analysis of Wikipedia Documents using MapReduce", in *4th IEEE International Workshop on Data Integration and Mining (DIM), collocated with 16th IEEE International Conference on Information Reuse and Integration, San Franscisco, USA (IRI 2015)*.

Invited Workshop Publications

83. Chao Li, Balaji Palanisamy and Runhua Xu, "Scalable and Privacy-preserving Design of On/Off-chain Smart Contracts", in *1st International Workshop on Blockchain and Data Management, BlockDM 2019, in conjunction with 35th IEEE International Conference on Data Engineering, ICDE 2019*

Conference Posters and System Demonstrations

84. Ritik Kumar, Balaji Palanisamy, Shamik Sural, "BEAAS: Blockchain Enabled Attribute-Based Access Control as a Service", in Proc. of *IEEE International Conference on Blockchain and Cryptocurrency, ICBC 2021*

85. Chao Li, Balaji Palanisamy, Aravind Kalaivanan and Sriram Raghunathan, "ReverseCloak: A Reversible Multi-level Location Privacy Protection System", in Proc. of *37th IEEE International Conference on Distributed Computing Systems, ICDCS 2017, Atlanta, USA. (System Demonstration)*

86. Balaji Palanisamy, Chao Li and Prashant Krishnamurthy, "Group Differential Privacy-preserving Disclosure of Multi-level Association Graphs", in Proc. of *37th IEEE International Conference on Distributed Computing Systems, ICDCS 2017, Atlanta, USA. (Poster)*

87. Lei Jin, Balaji Palanisamy and James Joshi, "Compromising Cloaking-based Location Privacy Preserving Mechanisms with Location Injection Attacks", in *21st ACM Conference on Computer and Communications Security, CCS 2014* , Scottsdale, Arizona, USA (Poster).

88. Qiulei Guo, Balaji Palanisamy and Hassan Karimi, "A Distributed Polygon Retrieval Algorithm using MapReduce", in *10th IEEE International Conference on Collaborative Computing: Networking, Applications and Worksharing, Collaboratecom, 2014*, Miami, USA (Poster).

89. Balaji Palanisamy, Sindhuja Ravichandran, Ling Liu, Binh Han and Kisung Lee, "Road Network Mix-zones for Anonymous Location Based Services, " *Demo at the 27th IEEE International Conference on Data Engineering, ICDE 2013*, Brisbane, Australia, 2013.

90. Kisung Lee, Ling Liu, Binh Han, Balaji Palanisamy, "RoadAlarm: a Spatial Alarm System on Road Networks, " *Demo at the 27th IEEE International Conference on Data Engineering, ICDE 2013*, Brisbane, Australia, 2013

91. Mustaque Ahamad, Douglas Blough, Ling Liu, David Bauer, Apurva Mohan, Daisuke Mashima, Bhuvan Bamba, Balaji Palanisamy, Ramkumar Krishnan, Italo Dacosta, and Ketan Kalgaonkar, "MedVault: Health Professional Access to Source-Verifiable Patient-Centric PHR Repository, " *at poster session in 19th Usenix Security Symposium, USENIX Security 2010*, Washington, DC, August, 2010

Technical Reports

92. Apurva Mohan , David Bauer, Douglas M. Blough, Mustaque Ahamad, Bhuvan Bamba, Ramkumar Krishnan, Ling Liu, Daisuke Mashima, Balaji Palanisamy, "A Patient-centric, Attribute-based, Source-verifiable Framework for Health Record Sharing," *GIT CERCS Technical Report No. GIT-CERCS-09-11, 2009*, Georgia Institute of Technology, Atlanta, GA, USA

Patents

- Balaji Palanisamy and Aameek Singh, "Locality-aware Resource Allocation for Cloud Computing", *United States Patent Application No. 13/481,614*

- Marielle Gross and Balaji Palanisamy, Non-fungible Token System for Ensuring Ethical, Efficient and Effective Management of Biospecimens, Application No.: PCT/US2022/043481, Filed: September 14, 2022

Grants/ Funding

- **NSF-SaTC Award**

  2020-2024

  - SaTC: CORE: Small: Blockchain-based Mechanisms for Timed Data Release and Timed Transactions, NSF Secure and Trustworthy Computing program Award (2020-2023), Balaji Palanisamy (PI), Award amount: $442,515

- **GenCyber Grant**

  07/2022-12/2023

  - GenCyber@Pitt, PI: Ahmed Ibrahim, Co-PI: Balaji Palanisamy, Senior Personnel: Prashant Krishnamurthy, Sherif Khattab, Keith Trahan, award amount: $148,377.33$

- **Pitt Cyber Accelerator Grant**

  01/2023-12/2023

  - A Sampling and Modeling Framework to Counter Online Conspiratorial Propaganda, PI: Yu-Ru Lin, Co-PIs: Balaji Palanisamy, Michael Colaresi and Amin Rahimian, Award amount: $17,495

- **Emerson Collective grant**

  01/2022-12/2024

  - NFTs for Ethical, Efficient, Effective Use of Biosamples. John Hopkins University - PI: Jeff Khan, Co-I: Mario Macis et al, University of Pittsburgh - PI: Marielle Gross, Co-I: Balaji Palanisamy, Adrian Lee, Adam Lee, Dmitriy Babichenko et al, Total amount: $600,531$, sub-award to Pitt: $273,530$

- **Chancellor's Gap Award**

  01/2022- 12/2022

  - An NFT-backed Biobanking App and Platform, Pitt Chancellor's Gap funding Off cycle Award (2022), PIs: Balaji Palanisamy, Marielle Gross, award amount: $36,495

- **NSF-CDL Award**

  2017-2022

  - Security-assured Data Science Workforce Development in Pennsylvania, NSF OAC Award (2017-2022), Balaji Palanisamy (PI), Kostas Pelechrinis (Co-PI), James Joshi (Co-PI) and Brian Langston (Co-PI), Senior Personnel: Prashant Krishnamurthy, Michael Spring, David Tipper, Robert Perkoski and David Thaw, Award Amount: $476,903.00

- **Pitt Cyber Accelerator Grant**

  05/2020-12/2020

  - A Beacon Approach to Providing Covid 19 Contact Tracing Privacy, PI: David Tipper, Co-PIs: Kostas Pelechrinis, Mai Abdel-Hakim, Prashant Krishnamurthy, Alex Labrinidis, Balaji Palanisamy, and Jacob Biehl, Award Amount: $10,025

- **Pitt Cyber Grant**

  2018-12/2023

  - Distinguished Cybersecurity Seminar Series, Balaji Palanisamy (Co-PI) with James Joshi (PI), Award Amount: $10,000

- **IBM Faculty Award**

  2017-2019

  - Decoupled Service Architecture for Seamless Edge Resource Allocation and Service Management, IBM (2017), Balaji Palanisamy (PI), Award Amount: $20,000.00

- **NSF-CICI Award**

  2016- 2018

  – SAC-PA: Towards Security Assured Cyberinfrastructure in Pennsylvania, NSF CICI Award (2016 - 2018), Balaji Palanisamy (Co-PI) with J. Joshi (PI), B. Stengel (Co-PI), M. Spring (CoPI), P. Krishnamurthy (Co-PI), Award Amount: $499,951.00

- **NSF-DGE Award**

  2014- 2018

  – A Curriculum for Security Assured Health Informatics, NSF-DGE Award (2014 - 2018), Balaji Palanisamy (Co-PI) with J. Joshi (PI), K. Pelechrinis (Co-PI), B. Parmanto (CoPI), P. Krishnamurthy (Co-PI), Award Amount: $897,055.00

- **Central Research Development Fund from University of Pittsburgh**

  2015- 2019

  – Sustainability-aware Datacenter Management for Sustainable Cloud Computing (2015 - 2017), Balaji Palanisamy (PI) , Award Amount: $15,975.00

- **Center on Race and Social Problems, University of Pittsburgh**

  2016- 2018

  – A+ FamCare: African American Family- and Child-Affirming Resilience Education, Balaji Palanisamy (Co-PI) with Lovie Foster (PI), Award Amount: $10,000.00

Courses

- INFSCI 1690 - Cloud Computing (Fall 2021)

- INFSCI 1620 - Advanced Information Security & Privacy (Spring 2021, Fall 2022)

- INFSCI 2750 - Cloud Computing (Spring 2016, Spring 2017, Spring 2018, Spring 2019, Spring 2020, Spring 2021, Spring 2022, Spring 2023)

- INFSCI 3350 - Doctoral Seminar - Blockchains (Spring 2022)

- INFSCI 3350 - Doctoral Seminar - Information Privacy (Spring 2016)

- INFSCI 2955 - Special Topics: Systems - Cloud Computing (Spring 2015)

- INFSCI 1074 - Computer Security (Fall 2013, Fall 2014, Fall 2015, Fall 2016, Fall 2019)

- INFSCI 2150 - Information Security & Privacy (Spring 2014, Fall 2014, Spring 2017, Fall 2017, Spring 2018, Fall 2018, Fall 2019, Fall 2022)

Students Advising and Committees

PhD Students (current):

- Jingzhe Wang (since Fall 2021) - Research focus: Blockchains, Timed Data Release

- Abdulrahman Mohsen Alhaidari (since Summer 2022) - Research focus: Internet-of-things, Blockchains, Metaverse

- Ying Song (since Fall 2022) - Research focus: Privacy and fairness in Machine Learning

- Yijun Yuan (since Fall 2023) - Research focus: Security and Privacy in Virtual and Augmented Reality Environments

PhD Students (past):

- Chao Li (Fall 2014 - Spring 2019) - Research focus: Blockchains, Timed Data Release, Multi-level Data and Location Privacy. First employment: Assistant Professor, School of Computing and Information Technology, Beijing Jiaotong University

- Jinlai Xu (Fall 2015 - Fall 2021) - Research focus: Edge Computing, Internet-of-things, Federated Clouds, First employment: Researcher/Engineer, Infrastructure System Lab, ByteDance

Doctoral Dissertation Committees:

- Leila Karimi - PhD, University of Pittsburgh

- Runhua Xu- PhD, University of Pittsburgh

- Nathalie Baracaldo - PhD, University of Pittsburgh

- Abdulaziz Alqahtani - PhD, University of Pittsburgh

- Mohammad Hasanzadeh Mofrad - PhD, University of Pittsburgh

- Zaeem Hussain - PhD, University of Pittsburgh

- Qiulei Guo - PhD, University of Pittsburgh

- Sira Akavipat - PhD, University of Pittsburgh

- Luai Esmail Hasnawi - PhD, University of Pittsburgh

- Qun Yu - PhD, University of Pittsburgh

- Xiao Ma - PhD, University of Pittsburgh

Comprehensive Examination Committees:

- Leila Karimi - PhD, University of Pittsburgh

- Runhua Xu- PhD, University of Pittsburgh

- Usman Anjum - PhD, University of Pittsburgh

- Jinlai Xu - PhD, University of Pittsburgh

- Qiulei Guo - PhD, University of Pittsburgh

- Chao Li - PhD, University of Pittsburgh

- Ayman AbdelHamid - PhD, University of Pittsburgh

- Amer Malki - PhD, University of Pittsburgh

- Qun Yu - PhD, University of Pittsburgh

- Ke Zhang - PhD, University of Pittsburgh

- FNU Xerandy - PhD, University of Pittsburgh

Master's Thesis Committees

- Angela Horneman - MS, University of Pittsburgh

- Shauna Michelle Policicchio - MS, University of Pittsburgh

Work Experience

- **IBM Almaden, Research**   San Jose, CA
  Research Intern, Services Innovation Lab   May 2012 - Aug 2012
    - FileSystem based Caching techniques for seamless integration of Storage across Compute and Storage Clouds

- **IBM Almaden, Research**   San Jose, CA
  Research Intern, Storage Systems   May 2011 - Aug 2011
    - Utility-based cloud usage model for MapReduce clouds with associated VM-aware scheduling and resource provisioning techniques and virtual machine management

- **IBM Almaden, Research**   San Jose, CA
  Research Intern, Storage Systems   May 2010 - Aug 2010
    - Locality-optimizations for MapReduce in a Cloud

- **Google, Inc.**   Mountain View, CA
  Software Engineering Intern   May 2008 - Aug 2008
    - Network monitoring systems for the Google Video Conferencing network infrastructure

- **Google, Inc.**   Mountain View, CA
  Software Engineering Intern   May 2009 - Aug 2009
    - Troubleshooting and remote monitoring tool for controlling the Google Video Conferencing network infrastructure and the associated Audio/ Video devices

- **Indian Institute of Science, IISc**   Bangalore, India
  Project Assistant   Jan 2007 - May 2007
    - Routing and resource allocation techniques for wireless sensor networks - with Prof. Joy Kuri and Prof. Anurag Kumar

Professional Services

- **Journal Editorial Boards**

    - Associate Editor, IEEE Transactions on Dependable and Secure Computing, IEEE TDSC
    - Associate Editor, IEEE Transactions on Services Computing, IEEE TSC

- **Journal Reviews**

    - IEEE Transactions on Dependable and Secure Computing, IEEE TDSC
    - IEEE Transactions on Services Computing, IEEE TSC
    - IEEE Transactions on Parallel and Distributed Systems, IEEE TPDS
    - IEEE Transactions on Mobile Computing, IEEE TMC
    - IEEE Transactions on Reliability
    - IEEE Transactions on Learning Technologies, IEEE TLT
    - IEEE Transactions on Vehicular Technology, IEEE TVT
    - ACM Transactions on Database Systems, ACM TODS
    - ACM Transactions on the Web, ACM TWEB
    - ACM Transactions on Internet Technology, ACM TOIT

- International Journal of Very Large Databases, VLDBJ
- Journal of Parallel and Distributed Computing, JPDC
- Wireless Networks Journal
- Transactions on Collaborative Computing
- Journal of Grid Computing

- **Conference/Workshop Program Committee Chairing & Organization:**

  - Senior Program Committee member - ACM International Conference on Information and Knowledge Management, CIKM 2022, CIKM 2023
  - Program Committee Chair - the Fifth IEEE International Conference on Trust, Privacy and Security in Intelligent Systems, and Applications, IEEE TPS 2023
  - Program Committee Vice Chair - 2021 IEEE International Conference on Big Data, IEEE BigData 2021
  - Vice Program Committee Chair - 2020 International Conference on Blockchain, ICBC 2020
  - Demo Track Chair - 37th IEEE International Conference on Distributed Computing Systems, ICDCS 2017

- **Conference Program Committees:**

  - World Wide Web Conference, WWW 2019, WWW 2020, WWW 2021, WWW 2022, WWW 2023
  - 35th-39th IEEE International Conference on Distributed Computing Systems, ICDCS 2015, ICDCS 2016, ICDCS 2017, ICDCS 2018, ICDCS 2019, 2021, 2022, 2023
  - 24th-26th ACM International Conference on Information and Knowledge Management, CIKM 2015, CIKM 2016, CIKM 2017, CIKM 2018, CIKM 2021,CIKM 2022, CIKM 2023
  - 19th International Conference on Information Systems Security, ICISS 2020, ICISS 2023
  - 2nd & 3rd International Workshop on Blockchain and Data Management, BlockDM 2020, BlockDM 2021, in conjunction with ICDE 2020 and ICDE 2021
  - 5th and 6th ACM Conference on Data and Application Security and Privacy, CODASPY 2015, CODASPY 2016
  - 7th - 10th- International Conference on Cloud Computing, IEEE CLOUD 2014, IEEE CLOUD 2015, IEEE CLOUD 2016, IEEE CLOUD 2017
  - 15th International Conference on High Performance Computing, HiPC 2015

- **IEEE Communications Society**

  - Chair, IEEE Communications Society, Pittsburgh Chapter, April 2014 - present