

## **GENERAL INFORMATION**

### **Education:**

Ph D, Computer Science, Michigan State University, 2002.  
MS, Automation, Tsinghua University, 1998.  
BS, Automation, Tsinghua University, 1995.

### **Academic Appointments:**

2023 – Present Associate Dean for Research, Purdue Polytechnic Institute.  
2020 – Present Professor of CIT, Purdue University.  
2012 – 2020 Associate Professor of CIT, Purdue University.  
2003 – 2012 Assistant, Associate Professor of Computer Technology, Ball State University

### **Professional Certifications**

2010 – Present Six Sigma Black Belt  
2007 – Present Certified Information System Security Professionals (CISSP), (ISC)<sup>2</sup>  
1998 – 2015 Microsoft Certified System Engineer (MCSE), Microsoft

### **Honors and awards**

1. HRSA (*Health Resources & Services Administration*) Building Bridges to Better Health Competition, 2<sup>nd</sup> place, 2023.
2. 2023 Seed for Success Acorn Award, Purdue University
3. Outstanding Faculty Award in Engagement, Department of Computer and Information Technology, Purdue University. February 2023.
4. Leadership in Manufacturing Award, Manufacturing Times Digital (MxD), 2021
5. Good to Great Award, Purdue Polytechnic, 2021
6. Outstanding Faculty Award in Discovery, Department of Computer and Information Technology, Purdue University. February 2020.
7. University Faculty Scholars, Purdue University, May 2019
8. Exemplary contributions and service, The Association of Technology, Management, and Applied Engineering (ATMAE), November 12, 2016
9. Exemplary contributions and service, The Association of Technology, Management, and Applied Engineering, November 16, 2012
10. Outstanding Faculty in Teaching, Department of Technology, Ball State University, 2010.

### **Leadership in professional societies or organizations**

2018 - Present Editor, Associate Editor, Journal of IET Smart Cities.  
<https://digital-library.theiet.org/journals/iet-smc/editorial-board>  
2015 - 2017 Member, IEEE Cybersecurity Initiative Steering Committee.  
2014 - 2016 Board of Directors, Association of Technology, Management, and Applied Engineering (ATMAE), Elmhurst, IL.  
2010 - 2012 President, EECT division of Association of Technology, Management, and Applied Engineering, Elmhurst, IL.

### Professional and leadership development activities

|                |  |
|----------------|--|
| 2022 – 2023    | Faculty Insights Forum, Academic Leadership Training, Office of the Provost, Purdue University   |
| 2019 – 2020    | Faculty Leadership Academy for Interdisciplinary Research (FLAIR) Fellows Program, Office of the Executive Vice President for Research and Partnerships, Purdue University |
| 2018 – 2019    | Faculty Leadership Training for Research Impact Area Champions, Polytechnic Institute, Purdue University   |
| 2017 – 2021    | Research Mentoring Lunch meetings, Polytechnic Institute, Purdue University  |
| 2015 – Present | Web trainings on Research Conducts, Ethics and Compliance, Human Subject Research and etc.   |
| 2014 – 2015    | Instruction Matters: Purdue’s Academic Course Transformation (IMPACT), Purdue University   |

### Memberships in academic, professional, and scholarly societies

|                |   |
|----------------|---|
| 2002 – Present | Institute of Electrical and Electronics Engineers, (IEEE)                               |
| 2005 – Present | Computer Society, IEEE  |
| 2009 – Present | International Information Systems Security Certification Consortium, (ISC) <sup>2</sup> |
| 2012 – Present | The Association for Computing Machinery, ACM  |
| 2013 – Present | ACM Special Intergroup Group on Information Technology Education (SIGITE).              |
| 2013 – 2016    | Information Technology Education and Research Association (ITERA)                       |
| 2014 – 2016    | American Society for Engineering Education (ASEE)                                       |
| 2003 – 2016    | Association of Technology, Management, and Applied Engineering, ATAME                   |

## **PUBLICATIONS**

### Full articles in refereed journals

1. Ou, B., Shao, G., Yang, B., & Fei, S. (2025). FocalSR: Revisiting image super-resolution transformers with fourier-transform cross attention layers for remote sensing image enhancement. *Geomatica*, 77(1). doi:[10.1016/j.geomat.2024.100042](https://doi.org/10.1016/j.geomat.2024.100042)
2. Huang, Y., Yang, B., Carpenter, J., Jung, J., & Fei, S. (2025). Temperate forest tree species classification with winter UAV images. *Remote Sensing Applications: Society and Environment*, 37. doi:[10.1016/j.rsase.2024.101422](https://doi.org/10.1016/j.rsase.2024.101422)
3. Huang, Y., Ou, B., Meng, K., Yang, B., Carpenter, J., Jung, J., & Fei, S. (2024). Tree Species Classification from UAV Canopy Images with Deep Learning Models. *Remote Sensing*, 16(20). doi:[10.3390/rs16203836](https://doi.org/10.3390/rs16203836)
4. Wei-Kocsis, J., Sabounchi, M., Mendis, G. J., Fernando, P., Yang, B., & Zhang, T. (2024). Cybersecurity Education in the Age of Artificial Intelligence: A Novel Proactive and

- Collaborative Learning Paradigm. *IEEE Transactions on Education*, 67(3), 395-404.  
doi:[10.1109/TE.2023.3337337](https://doi.org/10.1109/TE.2023.3337337)
5. Xiong, C., Liu, X., Tu, W., Yang, B., Liangpunsakul, S., & Su, J. (2024). Mo1518 Determinants of Risks Associated with Alcohol-Associated Hepatitis or Pancreatitis: A Comprehensive Analysis of the All of Us Cohort. *Gastroenterology*, 166(5), S-1677.  
doi:[10.1016/s0016-5085\(24\)04312-9](https://doi.org/10.1016/s0016-5085(24)04312-9)
6. Wang, R., Jo, W., Zhao, D., Wang, W., Yang, B., & Chen, G. (2024.). Husformer: A Multi Modal Transformer for Multi Modal Human State Recognition. *IEEE Transactions on Affective Computing*.
7. Li, Z., Yang, B., & Xiong, J. (2024). Message from the Program Chairs SmartCloud 2024. *Proceedings - 2024 IEEE 9th International Conference on Smart Cloud, SmartCloud 2024*, ix. doi:[10.1109/SmartCloud62736.2024.00005](https://doi.org/10.1109/SmartCloud62736.2024.00005)
8. Jo, W., Wang, R., **Yang, B.**, Foti, D., Rastgaar, M., & Min, B. -C. (2024). Cognitive Load-Based Affective Workload Allocation for Multihuman Multirobot Teams. *IEEE Transactions on Human-Machine Systems*, 1-14. doi:[10.1109/thms.2024.3509223](https://doi.org/10.1109/thms.2024.3509223)
9. Lu, Y., Zhang, J., Sun, S., Guo, Q., Cao, Z., Fei, S., **Yang, B.** & Chen, Y. V. (2024). Label-Efficient Video Object Segmentation with Motion Clues. *IEEE Transactions on Circuits and Systems for Video Technology*, 34(8), 6710-6721. doi:[10.1109/TCSVT.2023.3298853](https://doi.org/10.1109/TCSVT.2023.3298853)
10. Jin, N., Li, Z., Kettler, C., Tu, W., **Yang, B.** & Su, J. (2023.). ARDaC Common Data Model Facilitates Data Dissemination and Enables Data Commons for Modern Clinical Studies. In *Medinfo 2023*. IOS Press.
11. Mulkey, M., Huang, H., Albanese, T., **Yang, B.** & Kim, S. (2023). Supervised Deep Learning with Vision Transformer Predicts Delirium Using Limited Lead EEG. *Scientific Reports*.
12. Tang, Z., Su, J., Su, J., **Yang, B.** & Song, Q. (2023.). SiGra: Single cell spatial elucidation through image augmented graph transformer. *Nature Communications*.
13. Tang, Z., Liu, X., Li, Z., Zhang, T., **Yang, B.**, Su, J., & Song, Q. (2023). SpaRx: Elucidate single-cell spatial heterogeneity of drug responses for personalized treatment. To appear *Briefings in Bioinformatics*. 2023.
14. Tang, Z., Li, Z., Hou, T., Zhang, T., **Yang, B.**, Su, J., & Song, Q. (2023). SiGra: Single-cell spatial elucidation through image-augmented graph transformer. *Nature Communications*. 14, 5618 (2023). <https://doi.org/10.1038/s41467-023-41437-w>
15. Lu, Y., Zhang, J., Sun, S., Guo, Q., Cao, Z., Fei, S., **Yang, B.** & Chen, Y. (2023). Label-Efficient Video Object Segmentation with Motion Clues. *IEEE Transactions on Circuits and Systems for Video Technology*. DOI: 10.1109/TCSVT.2023.3298853
16. Mulkey, M., Huang, H., Albanese, T., Sunghan, K., & **Yang, B.** (2023). Supervised Deep Learning with Vision Transformer Predicts Delirium Using Limited Lead EEG, *Scientific report*, (2023)13:7890 <https://doi.org/10.1038/s41598-023-35004-y>
17. Tang, Z., Zhang, T., **Yang, B.**, Su, J., & Song, Q. (2023). spaCI: deciphering spatial cellular communications through adaptive graph model. *Briefings in Bioinformatics*, 24(1). <https://doi.org/10.1093/bib/bbac563>
18. Mulkey, M., Albanese, T., Kim, S., Huang, H., & **Yang, B.** (2022). Delirium detection using GAMMA wave and machine learning: A pilot study. *Research in Nursing & Health ( RINAH )*, 45(6). <https://doi.org/https://doi.org/10.1002/nur.22268>

19. Li, S., Tang, Z., Jin, N., **Yang, Q.**, Gang Liu, Liu, T., ... Ma, L. (2022). Uncovering Brain Differences in Preschoolers and Young Adolescents with Autism Spectrum Disorder Using Deep Learning. *International Journal of Neural Systems*, 32(9), 11.  
<https://doi.org/https://doi.org/10.1142/S0129065722500447>
20. Liang, J., Wang, Y., Chen, Y. V., **Yang, B.**, & Liu, D. (2022). A Triangulation-Based Visual Localization for Field Robots. *IEEE/CAA Journal of Automatica Sinica*, 9(6), 1083-1086
21. Tang, W., Vian, C., Tang, Z., & **Yang, B.** (2021). Anomaly detection of core failures in die casting X-ray inspection images using a convolutional autoencoder. *Machine Vision and Applications*, (32), 102. <https://doi.org/10.1007/s00138-021-01226-1>
22. Zhang, T., & **Yang, B.** (2021). Online multiple learning with working sufficient statistics for generalized linear models in big data. *Statistics and Its Interface* 14(4), 403-416
23. Zhang, T., & **Yang, B.** (2021). Accounting for factor variables in big data regression. *Statistica Sinica*, 31(1), 1-28. <https://doi.org/10.5705/ss.202018.0309>
24. Mendez Mena, D. & **Yang, B.** (2020). Decentralized Actionable Cyber Threat Intelligence for Networks and the Internet of Things, *IoT*, 2(1), 1-16.  
<https://doi.org/https://doi.org/10.3390/iot2010001>
25. Tang, Z<sup>G</sup>, Liu, X<sup>G</sup>, Chen, H<sup>G</sup>, Hupy, J. & **Yang, B.** (2020). Deep learning based wildfire event object detection from 4K aerial images acquired by UAS. *AI*, 1(2), 166-179.  
<https://doi.org/10.3390/ai1020010>
26. Mendez Mena, D.<sup>G</sup>, Papapanagiotou, I., & **Yang, B.** (2018). Internet of things: survey on security. *Information Security Journal: A Global Perspective*, 27(3), 162--182.  
<https://doi.org/10.1080/19393555.2018.1458258>
27. Albabtain, Y.<sup>G</sup>, **Yang, B.**, Dietz, J. E., Min, B.-C., & Gusev, D. A. (2018). Survey of GPU vulnerabilities and forensic science. *Technology Interface International Journal*, 19(1), 24-41, [http://tiij.org/issues/issues/fall2018/X\\_TIIJ%20fall%202018%20v19%20n1.pdf](http://tiij.org/issues/issues/fall2018/X_TIIJ%20fall%202018%20v19%20n1.pdf)
28. Ryu, S<sup>G</sup>, & **Yang, B.** (2018). A comparative study of machine learning algorithms and their ensembles for botnet detection. *Journal of Computer and Communications*, 6(05), 119-129. <https://doi.org/10.4236/jcc.2018.65010>
29. Zhang, T., & **Yang, B.** (2018). Dimension reduction for big data. *Statistics and Its Interface*, 11(2), 295-306. <https://doi.org/10.4310/SII.2018.v11.n2.a7>
30. Albabtain, Y.<sup>G</sup>, & **Yang, B.** (2018). The process of recovering image and web page artifacts from the GPU. *International Journal of Cyber-Security and Digital Forensics*, 7(2), 132-141. <https://doi.org/10.17781/P002380>
31. Chen, Y. V., **Yang, B.**, & Wang, W<sup>G</sup>. (2017). NetFlowMatrix: A visual approach for analyzing large NetFlow data. *International Journal of Security and Networks*, 12(4), 215-229. <https://doi.org/10.1504/IJSN.2017.088115>
32. Zhang, T., & **Yang, B.** (2017). An exact approach to ridge regression for big data. *Computational Statistics*, 32, 909-928. <https://doi.org/10.1007/s00180-017-0731-5>
33. Zhang, T., & **Yang, B.** (2017). Box-Cox transformation in big data. *Technometrics*, 59(2), 189-201. <https://doi.org/10.1080/00401706.2016.1156025>
34. Tian, C., **Yang, B.**, Zhong, J., & Liu, X. (2014). Trust-based incentive mechanism to motivate cooperation in hybrid P2P networks. *Computer Networks*, 73, 244-255.  
<https://doi.org/10.1016/j.comnet.2014.08.010>
35. Tian, C., & **Yang, B.** (2014). A D-S evidence theory based fuzzy trust model in file- sharing

- P2P networks. *Peer-to-Peer Networking and Applications*. 7(4), 332-345  
<https://doi.org/10.1007/s12083-012-0153-7>
36. Wang, X., Li, S., Li, M., & **Yang, B.** (2012). Cable-based moving reachability with mobile sensors. *Ad Hoc & Sensor Wireless Networks*, 14(3-4), 227-250.  
<https://www.oldcitypublishing.com/journals/ahsw-n-home/ahsw-n-issue-contents/ahsw-n-volume-14-number-3-4-2012/ahsw-n-14-3-4-p-227-250/>
  37. Mirzoev, T., **Yang, B.**, Davis, M., & Williams, T. (2011). A case study on virtual and physical I/O throughputs. *Journal of Industrial Technology*, 27(3), 1-10.  
<https://www.atmae.org/resource/resmgr/Articles/Mirzoev-Virtual-Physical-I-O.pdf>
  38. Tian, C., & **Yang, B.** (2011). R2 Trust, a reputation and risk based trust management framework for large-scale, fully decentralized overlay networks. *Future Generation Computer Systems*, 27(8), 1135-1141. <https://doi.org/10.1016/j.future.2011.03.006>
  39. Mirzoev, T., & **Yang, B.** (2010). Securing virtualized datacenters. *International Journal of Engineering Research & Innovation*, 2(1), 23-29  
<http://ijeri.org/IJERI-Archives/issues/spring2010/spring2010.htm>
  40. He, Y., Ren, H., Liu, Y., & **Yang, B.** (2009). On the reliability of large-scale distributed systems – A topological view. *Computer Networks*, Vol. 53(Issue 12), 2140-2152.  
doi: <https://doi.org/10.1016/j.comnet.2009.03.012>
  41. **Yang, B.**, & Gao, T. (2008). Enhancing network availability and security via multi-homed virtual private networks. *International Journal of Modern Engineering*. 8(2), 47-52.  
[http://ijme.us/issues/spring2008/IJME\\_spring08\\_web\\_book\\_b.pdf](http://ijme.us/issues/spring2008/IJME_spring08_web_book_b.pdf)
  42. Yang, Z., Xu, B., **Yang, B.**, Dai, J., & Gu, T. (2008). PAS: Prediction-based Adaptive Sleeping for Diffusion Stimulus Monitoring Sensor Networks. *Ad Hoc & Sensor Wireless Networks*, 5(3-4), 235-246.  
<https://www.oldcitypublishing.com/journals/ahsw-n-home/ahsw-n-issue-contents/ahsw-n-volume-5-number-3-4-2008/ahsw-n-5-3-4-p-235-246/>
  43. **Yang, B.** (2007). Project teaches students to diagnose an ailing Windows OS, *Techdirections*, 67(4), 23-26. <https://eric.ed.gov/?id=EJ786242>
  44. **Yang, B.**, & Mohapatra, P. (2004). DifferServ-aware multicasting. *Journal of High-Speed Networks*, 13(1), 37-57. <https://content.iospress.com/articles/journal-of-high-speed-networks/jhs235>
  45. **Yang, B.**, & Mohapatra, P. (2004). Multicasting in MPLS domains. *Journal of Computer Communications*, 27(2), 162-170. [https://doi.org/10.1016/S0140-3664\(03\)00212-3](https://doi.org/10.1016/S0140-3664(03)00212-3)

#### Short communications, letters, notes or briefs in refereed journals

1. **Yang, B.**, & Kirk, B. (2016). *Try-CybsI: A Platform for Trying Out Cybersecurity*, IEEE Security and Privacy 4(14), (pp. 74-75). IEEE.  
<https://doi.org/10.1109/MSP.2016.68>
2. Hacker, T. J., **Yang, B.**, & McCartney, G. (2014). *Empowering Faculty: A Campus Cyberinfrastructure Strategy for Research Communities*. Educause.  
<http://er.educause.edu/articles/2014/7/empowering-faculty-a-campus-cyberinfrastructure-strategy-for-research-communities>.

**Peer Reviewed Conference or symposium proceedings**

1. Zhao, H., Huang, H., Zhang, T., **Yang, B.**, Wei-Kocsis, J., & Fei, S. (2024). Unsupervised Machine Learning for Detecting and Locating Human-Made Objects in 3D Point Cloud. In *Proceedings - 2024 IEEE International Conference on Big Data, BigData 2024* (pp. 1500-1507). doi:[10.1109/BigData62323.2024.10825112](https://doi.org/10.1109/BigData62323.2024.10825112)
2. Huang, H., Tang, Z., Zhang, T., and **Yang, B.** (2023), "*Improved Clustering Using Nice Initialization*", 2023 IEEE Globecom conference proceedings.
3. Tang, Z., Zhang, T., **Yang, B.**, Su, J., & Song, Q. (2023). *PINet: Privileged Information Improve the Interpretability and generalization of structural MRI in Alzheimer's Disease*, ACM-BCB 2023, 47, pp1-9. <https://doi.org/10.1145/3584371.3613000>
4. Huang, H., Tang, Z., Zhang, T., **Yang, B.**, Song, Q., and Su, J. (in press). *Feature Selection for Unsupervised Machine Learning*. IEEE SmartCloud 2023.
5. Jin, N., Shah, D., Terven, J., Lozada, D., Bennet, Z., Chen, L., and **Yang, B.** (in press). *Making Autonomous Stores Smarter (MASS): A Practical Solution to Improve Product Detection Performance Using Synthetic Dataset at Scale*, 2023 IEEE SmartCloud.
6. Jin, N., Li, Z., Kettler, C., **Yang, B.**, Tu, W., & Su, J. (in press). *ARDaC Common Data Model Facilitates Data Dissemination and Enables Data Commons for Modern Clinical Studies*. In Medinfo 2023. IOS Press.
7. Kocsis, J., Sabounchi, M., **Yang, B.**, & Zhang, T. (2022). *Cybersecurity Education in the Age of Artificial Intelligence: A Novel Proactive and Collaborative Learning Paradigm*. In 2022 IEEE Frontiers in Education Conference (FIE) (pp. 1–5). <https://doi.org/10.1109/FIE56618.2022.9962643>
8. Tang, W., Zhang, T., & **Yang, B.** (2022). *SemiCon: A Semi-supervised Learning for Industrial Image Inspection*. In 2022 IEEE CSCloud/EdgeCom. (pp. 12–17). <https://doi.org/10.1109/CSCloud-EdgeCom54986.2022.00012>
9. Liu, D., Cui, Y., Guo, X., Ding, W., **Yang, B.**, & Chen, Y. V. (2021). *Visual Localization for Autonomous Driving: Mapping the Accurate Location in the City Maze* (pp. 3411–3420). Milan, Italy: IEEE International Conference on Pattern Recognition (ICPR). <https://doi.org/10.1109/ICPR48806.2021.9411961>
10. Liu, D., Cui, Y., Yan, Li, Mousas, C., **Yang, B.** & Chen, Y. (2021), *DenserNet: Weakly Supervised Visual Localization Using Multi-scale Feature Aggregation*, Proceedings of the AAAI Conference on Artificial Intelligence, 35(7), (pp.6101-6109). <https://doi.org/10.1609/aaai.v35i7.16760>
11. Tang, W., Liu, X., Huang, H., Tang, Z., Zhang, T. & **Yang, B.** (2020). *High-Order Orthogonal Decomposition for Tensors*. 2020 IEEE Smartcom.
12. Huang, H, Liu, X., Zhang, T., & **Yang, B.** (2020). *Regression PCA for Moving Objects Separation*. To appear in proceedings of 2020 IEEE Globecom, Taipei, Taiwan, Dec. 2020, pp. 1-6, doi: 10.1109/GLOBECOM42002.2020.9322471.
13. Liu, X., Huang, H., Tang, W., Zhang, T., & **Yang, B.** (2020). *Low-Rank Sparse Tensor Approximations for Large High-Resolution Videos*. 2020 IEEE ICMLA, Miami, FL, USA, 2020, pp. 65-70, doi: 10.1109/ICMLA51294.2020.00020.
14. Tang, Z., Liu, X., & **Yang, B.** (2020). *PENet: Object Detection using Points Estimation High Definition Aerial Images Approximations for Large High-Resolution Videos*. 2020 IEEE ICMLA, Miami, FL, USA, 2020, pp. 392-398, doi:

10.1109/ICMLA51294.2020.00069

15. Kalyanam, R, Willis, C., Kirkpatrick, C., & **Yang, B.** (2020). *CHEESE: Cyber Human Ecosystem of Engaged Security Education*. To appear in proceedings of 2020 IEEE Frontiers in Education, Uppsala, Sweden, Oct. 2020. pp. 1-7, doi: 10.1109/FIE44824.2020.9273931.
16. Chen, H.<sup>G</sup>, & **Yang, B.** (2019, December). *A Performance Evaluation of CAN Encryption*. 1<sup>st</sup> IEEE International conference on Trust, Privacy, and Security in Intelligent Systems and Applications (TPS-ISA) (pp.140-149). Los Angeles, CA, USA. IEEE. <https://doi.org/10.1109/TPS-ISA48467.2019.00025>
17. Liu, X.<sup>G</sup>, Tang, Z.<sup>G</sup>, Huang, H.<sup>G</sup>, Zhang, T., & **Yang, B.** (2019, December). *Multiple Learning for Regression in Big Data*. 2019 IEEE International Conference on Machine Learning and Applications (ICMLA) (pp. 587-594). Miami, FL, USA. IEEE. <https://doi.org/10.1109/ICMLA.2019.00109>.
18. Liu, X.<sup>G</sup>, Huang, H.<sup>G</sup>, Tang, Z.<sup>G</sup>, Zhang, T., & **Yang, B.** (2019, December). *Sparse Block Regression (SBR) for Big Data with Categorical Variables*. 2019 IEEE international conference on Big Data (BIGDATA) (pp. 221-227). Los Angeles, CA, USA, IEEE. <https://doi.org/10.1109/BigData47090.2019.9006448>
19. Penmetcha, M.<sup>G</sup>, Luo, S.<sup>G</sup>, Samantaray, A.<sup>G</sup>, Dietz, J. E., **Yang, B.**, & Min, B.-C. (2019, October). *Computer vision-based algae removal planner for multi-robot teams*. 2019 IEEE International Conference on Systems, Man and Cybernetics (SMC) (pp.1575--1581). Bari, Italy. IEEE. <https://doi.org/10.1109/SMC.2019.8913967>
20. Tang, Z.<sup>G</sup>, Liu, X.<sup>G</sup>, Chen, Y. V., & **Yang, B.** (2019, October). *The role of multiple representations and representational fluency in cryptography education*. The 20th Annual Conference on Information Technology Education (SIGITE) (pp. 75-80), Tacoma, WA, USA. ACM. <https://doi.org/10.1145/3349266.3351412>.
21. Liu, X.<sup>G</sup>, Tang, Z.<sup>G</sup>, & **Yang, B.** (2019, May). *Predicting Network Attacks with CNN by Constructing Images from NetFlow Data*. 2019 IEEE 5th Intl Conference on Big Data Security on Cloud (BigDataSecurity) (pp. 61-66). Washington, DC, USA. <https://doi.org/10.1109/BigDataSecurity-HPSC-IDS.2019.00022>
22. Shakhder, A.<sup>G</sup>, Agrawal, S.<sup>G</sup>, & **Yang, B.** (2019, May). *Security Vulnerabilities in Consumer IoT Applications*. 2019 IEEE 5th Intl Conference on Big Data Security on Cloud (BigDataSecurity) (pp. 1-6). Washington, DC, USA. IEEE. <https://doi.org/10.1109/BigDataSecurity-HPSC-IDS.2019.00012>
23. Hansen, R. A., Seigfried-Spellar, K. C., Lee, S.<sup>G</sup>, Chowdhury, S.<sup>G</sup>, Abraham, N.<sup>G</sup>, Springer, J. A., **Yang, B.**, & Rogers, M. K. (2018, December). *File Toolkit for Selective Analysis & Reconstruction (FileTSAR) for Large-Scale Networks*. 2018 IEEE International Conference on Big Data (Big Data) (pp. 3059-3065). Seattle, WA, USA. IEEE. <https://doi.org/10.1109/bigdata.2018.8621914>
24. Chiang, W.<sup>G</sup>, Liu, X.<sup>G</sup>, Zhang, T., & **Yang, B.** (2018, December). *A study of Exact Ridge Regression for Big Data*. 2018 IEEE International Conference on Big Data (Big Data) (pp. 3821-3830). Seattle, WA, USA. IEEE <https://doi.org/10.1109/BigData.2018.8622274>
25. **Yang, B.**, Wang, M.<sup>G</sup>, Xu, Z.<sup>G</sup>, & Zhang, T. (2018, December). *Streaming Algorithm for Big Data Logistic Regression*. 2018 IEEE International Conference on Big Data (Big Data) (pp. 2940-2950). Seattle, WA, USA. IEEE. <https://doi.org/10.1109/BigData.2018.8622392>



26. Mendez Mena, D. M.<sup>G</sup>, & **Yang, B.** (2018, October). *Blockchain-Based Whitelisting for Consumer IoT Devices and Home Networks*. 19th Annual Conference on Information Technology Education (SIGITE) (pp. 7-12). Fort Lauderdale, FL, USA. ACM. <https://doi.org/10.1145/3241815.3241853>
27. Liu, F.<sup>G</sup>, Wang, S.<sup>G</sup>, Liu, X.<sup>G</sup>, Zhang, T., **Yang, B.**, Han, Q., & Vian, C. (2018, October). *AI-Driven Smart Manufacturing of Die Casting*. Proceedings of 2018 North American Die Casting Association Congress and Exposition (NADCA) (pp.10-18). Indianapolis, IN, USA.
28. AlBabtain, Y., & **Yang, B.** (2018, August). *The Process of Reverse Engineering GPU Malware and Provide Protection To GPUS*. 17th IEEE International Conference On Trust, Security And Privacy In Computing And Communications (TrustCom) (pp.1669-1673). New York, NY, USA. IEEE. <https://doi.org/10.1109/TrustCom/BigDataSE.2018.00248>
29. Zhao, J.<sup>G</sup>, Liu, X.<sup>G</sup>, Kuang, Y., Chen, Y. V., & **Yang, B.** (2018, June). *Deep CNN-Based Methods to Evaluate Neighborhood-Scale Urban Valuation Through Street Scenes Perception*. 2018 IEEE Third International Conference on Data Science in Cyberspace (DSC), (pp. 20-27). GuangZhou, China. IEEE. <https://doi.org/10.1109/DSC.2018.00012>
30. AlBabtain, Y.<sup>G</sup>, & **Yang, B.** (2018, May). *Live GPU Forensics: the Process of Recovering Video Frames from NVIDIA GPU*. Annual Association of Digital Forensics Security and Law Conference (ADFSL), (pp.71-82), San Antonio, TX, USA. ADFSL. <https://commons.erau.edu/adfsl/2018/presentations/3/>
31. AlBabtain, Y.<sup>G</sup>, & **Yang, B.** (2017, December). *GPU Forensics: Recovering Artifacts From The Gpus Global Memory Using Opencl*. The Third International Conference on Information Security and Digital Forensics (ISDF2017) (pp.12-20)., Thessaloniki , Greece, The Society of Digital Information and Wireless Communications (SDIWC). <http://paper.researchbib.com/view/paper/145384>
32. Lee, P.-T.<sup>G</sup>, & **Yang, B.** (2017, October). *Indexing Architecture for File Extraction from Network Traffic*. Proceedings of the 6th Annual Conference on Research in Information Technology (RIIT) (pp. 17-21). Rochester, NY, USA. ACM. <https://doi.org/10.1145/3125649.3125655>
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2. Hilt, M.<sup>U</sup>, Shao, D.<sup>G</sup>, & **Yang, B.** (2018, October). *RFID Security, Verification, and Blockchain: Vulnerabilities within the Supply Chain for Food Security*. Proceedings of the 19th Annual SIG Conference on Information Technology Education (SIGITE) (pp. p145). Fort Lauderdale, FL, USA. ACM. [Abstract] <https://doi.org/10.1145/3241815.3241838>
3. **Yang, B.** (2014, November). *Developing a Software Defined Network Curriculum for Computer Technology and Information Technology Students*. Proceedings of annual convention of Association of Technology, Management and Applied Engineering (ATMAE) (pp. 57). St. Louis, MO, USA. ATMAE. [Abstract] [https://www.atmae.org/resource/resmgr/Event\\_Materials/2014\\_Conf.\\_Proceedings.pdf](https://www.atmae.org/resource/resmgr/Event_Materials/2014_Conf._Proceedings.pdf)
4. **Yang, B.** (2014, November). *Visual Analytics in Information Security*. Proceedings of annual convention of Association of Technology, Management and Applied Engineering (ATMAE) (pp. 49). St. Louis, MO, USA. ATMAE. [Abstract] [https://www.atmae.org/resource/resmgr/Event\\_Materials/2014\\_Conf.\\_Proceedings.pdf](https://www.atmae.org/resource/resmgr/Event_Materials/2014_Conf._Proceedings.pdf)
5. **Yang, B.** (2012, November). *Challenges in Health Information Technology for Small Physician Practices*. Proceedings of annual convention of Association of Technology, Management and Applied Engineering (ATMAE) (pp. 92). Nashville, TN, USA. ATMAE. [Abstract] [https://www.atmae.org/resource/resmgr/event\\_materials/atmae2012confproc.pdf](https://www.atmae.org/resource/resmgr/event_materials/atmae2012confproc.pdf)

#### Editor of Refereed Journal

2018 - Present      Associate Editor, Journal of IET Smart Cities.  
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#### Books

1. Zhou, A., Zhu, R., Zheng, P., & **Yang, B.** (2011). *Windows Phone 7 Programming for Android and iOS Developers*. Indianapolis, IN: WROX.
2. **Yang, B.** Zheng, P., & Ni, L. M. (2007). *Professional Microsoft Smartphone Programming*. Indianapolis, IN: Wiley.

## TEACHING & LEARNING ACTIVITIES

### New Courses Developed

1. IE 590 Fundamentals of Secure Design, Fall 2018  
This course is offered outside Purdue University as the first course for the ‘Design for Security’ certificate program.
2. CNIT 344 Networking Engineering Fundamentals, Fall 2017
3. CNIT 370, introduction to cryptography, Fall 2017
4. CNIT 623 Applied Machine Learning, Fall 2017.

### Courses taught at Purdue in the last 5 years.

#### Fall 2024

1. CNIT 555: Advanced Networking. 1 section. 17 student(s) enrolled.
2. CNIT 69800: Research MS Thesis. 1 section. 2 student(s) enrolled.
3. TECH 64000: Research DTech Thesis. 1 section. 1 student(s) enrolled.
4. TECH 69900: Research PhD Thesis. 1 section. 2 student(s) enrolled.
5. TECH 69000: Cloud Security, Individual study. 1 section. 1 student(s) enrolled.

#### Spring 2024

1. CNIT 69800: Research MS Thesis. 1 section. 2 student(s) enrolled.
2. TECH 64000: Research DTech Thesis. 1 section. 1 student(s) enrolled.
3. TECH 69900: Research PhD Thesis. 1 section. 2 student(s) enrolled.
4. TECH 69000: Cloud Security, Individual study. 1 section. 1 student(s) enrolled.

#### Fall 2023

1. CNIT 34000: UNIX Administration. 1 section. 191 student(s) enrolled.
2. CNIT 62300: Big Data Machine Learning. 1 section. 18 student(s) enrolled.
3. CNIT 59000: Diffusion Models In Remote Sen. 1 section. 3 student(s) enrolled.
4. CNIT 69800: Research MS Thesis. 1 section. 4 student(s) enrolled.
4. TECH 64000: Research DTech Thesis. 1 section. 1 student(s) enrolled.
5. TECH 69900: Research PhD Thesis. 1 section. 3 student(s) enrolled.
6. TECH 69000: IoT Application & Concepts, individual study. 1 section. 1 student enrolled.
7. TECH 69000: Cloud Security Study, individual study. 1 section. 1 student enrolled.

#### Spring 2023

1. CNIT 555: Advanced Networking. 1 section. 9 student(s) enrolled.
2. CNIT 62300: Big Data Machine Learning. 1 section. 13 student(s) enrolled.
3. CNIT 69800: Research MS Thesis. 1 section. 3 student(s) enrolled.
4. TECH 64000: Research DTech Thesis. 1 section. 1 student(s) enrolled.
5. TECH 69900: Research PhD Thesis. 1 section. 3 student(s) enrolled.
6. CNIT 59000: Container Networking, Individual study. 1 section. 1 student(s) enrolled.

#### Fall 2022

1. CNIT 34000: UNIX Administration. 1 section. 78 student(s) enrolled.
2. CNIT 62300: Big Data Machine Learning. 1 section. 17 student(s) enrolled.

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3. CNIT 69800: Research MS Thesis. 1 section. 3 student(s) enrolled.
4. TECH 64000: Research DTech Thesis. 1 section. 1 student(s) enrolled.
5. TECH 69900: Research PhD Thesis. 1 section. 2 student(s) enrolled.

### **Spring 2022**

1. CNIT 55500: Advanced Network Security. 1 section. 21 student(s) enrolled.
2. CNIT 62300: Big Data Machine Learning. 1 section. 9 student(s) enrolled.
3. CNIT 69800: Research MS Thesis. 1 section. 1 student(s) enrolled.
4. TECH 64000: Research DTech Thesis. 1 section. 1 student(s) enrolled.
5. TECH 69900: Research PhD Thesis. 1 section. 3 student(s) enrolled.

### **Fall 2021**

1. CNIT 34000: UNIX Administration. 1 section. 61 student(s) enrolled.
2. CNIT 62300: Big Data Machine Learning. 1 section. 15 student(s) enrolled.
3. CNIT 69800: Research MS Thesis. 1 section. 1 student(s) enrolled.
4. TECH 69900: Research PhD Thesis. 1 section. 3 student(s) enrolled.

### **Spring 2021**

1. CNIT 55500: Adv Network Security. 1 section. 12 student(s) enrolled.
2. CNIT 62300: Big Data Machine Learning. 1 section. 13 student(s) enrolled.
3. CNIT 69800: Research MS Thesis. 1 section. 1 student(s) enrolled.
4. TECH 69900: Research PhD Thesis. 1 section. 4 student(s) enrolled.

### **Fall 2020**

1. CNIT 34000: UNIX Administration. 1 section. 57 student(s) enrolled.
2. CNIT 62300: Big Data Machine Learning. 1 section. 19 student(s) enrolled.
3. CNIT 69800: Research MS Thesis. 1 section. 1 student(s) enrolled.
4. TECH 69900: Research PhD Thesis. 1 section. 4 student(s) enrolled.

### **Spring 2020**

1. CNIT 55500: Adv Network Security. 1 section. 6 student(s) enrolled.
2. CNIT 62300: Big Data Machine Learning. 1 section. 19 student(s) enrolled.
3. CNIT 69800: Research MS Thesis. 1 section. 5 student(s) enrolled.
4. TECH 69900: Research PhD Thesis. 1 section. 3 student(s) enrolled.

## **DISCOVERY ACTIVITIES**

### **External grants and contracts awarded in support of Discovery.**

1. Biomedical informatics approaches and its implementation in cancer research  
Sponsoring Organization: Indiana University  
Role: PI  
Total Amount Awarded: USD 47,292.00  
Investigator Credit: 100%  
Grant Number: 40005061  
Funding Dates: 8/15/2024–8/14/2025

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2. Biomedical informatics approaches and its implementation in chronic disease management and intensive care of patients with chronic diseases  
Role: PI  
Sponsoring Organization: Indiana University  
Total Amount Awarded: USD 47,292.00  
Investigator Credit: 100%  
Grant Number: 40005078  
Funding Dates: 8/12/2024–8/11/2025
3. Collaborative Research: CyberTraining: Implementation: Medium: AI and Cybersecurity Education for Cyberinfrastructure: A Hands-On Approach  
Sponsoring Organization: National Science Foundation  
Role: PI  
Total Amount Awarded: USD 640,000.00  
Investigator Credit: 25%  
Grant Number: 10002476  
Funding Dates: 7/1/2024–6/30/2028
4. Promoting Economic Resilience and Sustainability of the Eastern U.S. Forests (PERSEUS)  
Sponsoring Organization: USDA  
Role: Co-PI  
Total Award Amount: \$10,000,000.00  
Date: December 15, 2022 - December 14, 2026
5. Hands-on and Portable Cybersecurity Training (Smart Manufacturing)  
Sponsoring Organization: Wistron Corporation  
Role: PI  
Total Award Amount: \$124,000.00  
Date: December 14, 2022 - December 14, 2025
6. Wistron Graduate Research Assistantship for Smart Manufacturing Platform Research  
Project Funding Agreement  
Sponsoring Organization: Wistron Corporation  
Role: Co-PI  
Total Award Amount: \$31,705.00  
Date: December 14, 2022 - December 14, 2025
7. Hands-on and Portable Cybersecurity Training (Open Edge PPlatform)  
Sponsoring Organization: Wistron Corporation  
Role: PI  
Total Award Amount: \$124,000.00  
Date: October 15, 2022 - October 15, 2025
8. HRSA Building Bridges to Better Health: Phase 1 and 2  
Sponsoring Organization: HEALTH RESOURCES & SERVICES ADMIN



## Baijian “Justin” Yang C.V.

Role: Co-PI

Total Award Amount: \$31,111.11

Date: October 18, 2022 - December 31, 2099

9. EAGER: SaTC-EDU: Cybersecurity Education in The Age of Artificial Intelligence: A Novel Proactive and Collaborative Learning Paradigm  
Sponsoring Organization: NATIONAL SCIENCE FOUNDATION  
Role: Co-PI  
Total Award Amount: \$299,934.00  
Date: May 1, 2021 - April 30, 2024
10. Biomedical informatics approaches and its implementation in cancer research  
Sponsoring Organization: INDIANA UNIVERSITY  
Role: PI  
Total Award Amount: \$50,635.00  
Date: August 15, 2022 - August 14, 2023
11. Data Coordinating Center for the Alcoholic Hepatitis Research Network  
Sponsoring Organization: INDIANA UNIVERSITY  
Role: PI  
Total Award Amount: \$53,966.00  
Date: July 1, 2022 - June 30, 2023
12. Graph AI precision medicine in chronic diseases using longitudinal real-world evidence data  
Sponsoring Organization: INDIANA UNIVERSITY  
Role: PI  
Total Award Amount: \$8,355.00 (supplemental)  
Date: August 16, 2021 - June 30, 2022
13. Graph AI precision medicine in chronic diseases using longitudinal real-world evidence data  
Sponsoring Organization: INDIANA UNIVERSITY  
Role: PI  
Total Award Amount: \$37,803.00  
Date: August 16, 2021 - June 30, 2022
14. FileTSAR+ An Elastic Network Forensic Toolkit for Law Enforcement  
Sponsoring Organization: NATIONAL INSTITUTE OF JUSTICE  
Role: Co-PI  
Total Award Amount: \$400,973.00  
Date: January 1, 2021 - December 31, 2022.
15. Methods of Identifying Neurological Delirium (MIND)  
Sponsoring Organization: East Carolina University  
Role: PI  
Total Award Amount: \$4,767.00  
Date: February 1, 2021 - January 31, 2022
16. CERIAS Ukrainian/US Cybersecurity Faculty and Curriculum Development Program  
Sponsoring Organization: CRDF Global

Baijian “Justin” Yang C.V.

Role: Co-PI

Total Award Amount: \$130,898.30

Date: July 13, 2021 - January 15, 2022

17. CERIAS Ukrainian Critical Infrastructure Protection Events 2021

Sponsoring Organization: CRDF Global

Role: Co-PI

Total Award Amount: \$70,766.40

Date: June 21, 2021 - September 30, 2021

18. Purdue Engineering Online and Socratic Arts

Sponsoring Organization: Socratic Arts Inc.

Role: PI

Total Award: \$8,000.00

Date: Feb 19, 2020 - Feb 18, 2021.

15. INTEL

Sponsoring Organization: INTEL Corporation

Role: PI

Total Award: \$25,000.00

Date: July 1, 2015 - December 31, 2015.

16. Collaborative Research: CHEESE: Cyber Human Ecosystem of Engaged Security Education

Sponsoring Organization: NATIONAL SCIENCE FOUNDATION

Role: PI

Total Award: \$349,936.00

17. CICI: RDP: Supporting Controlled Unclassified Information with a Campus Awareness and Risk Management Framework

Sponsoring Organization: NATIONAL SCIENCE FOUNDATION

Role: PI

Total Award: \$598,373.00

Date: September 1, 2018 - August 31, 2020.

18. File Toolkit for Selective Analysis and Reconstruction (File TSAR) for Large Scale Computer Networks

Sponsoring Organization: National Institute of Justice

Role: Co-PI

Total Award: \$487,440.00

Date: January 1, 2017 - December 31, 2018.

19. SaTC-EDU: EAGER Enhancing Cybersecurity Education Through a Representational Fluency Model

Sponsoring Organization: National Science Foundation

Role: PI

Total Award: \$299,376.00

## Baijian “Justin” Yang C.V.

Date: July 15, 2015 - December 31, 2018.

### 20. IEEE Try-CybSi Project

Sponsoring Organization: Institute of Electrical Electronics Engineers

Role: PI

Total Award: \$201,427.00

Date: September 28, 2015 - May 31, 2016.

### F. 6 Internal grants and contracts awarded in support of Discovery

#### 1. Intelligent Virtual Reality: Partnering VR with AI

Sponsoring Organization: Polytechnic Institute

Role: Co-PI

Total Award: \$8,000.00

Date: November 8, 2018 - June 30, 2019.

#### 2. Disaster and Accident Debris Data Compilation and Management for Transportation

Sponsoring Organization: Polytechnic Institute

Role: PI

Total Award: \$40,000.00

Date: August 2018 - June 2019.

#### 3. Building a decentralized network white list with Blockchain

Sponsoring Organization: Polytechnic Institute

Role: PI

Total Award: \$2,200.00

Date: June 2018 - August 2018.

#### 4. Visualizing and Explaining Deep Learning for Suburban Neighborhood Valuation

Sponsoring Organization: Polytechnic Institute

Role: Co-PI

Total Award: \$7,904.42

Date: April 17, 2018 - June 30, 2018.

#### 5. Polytechnic RDE Travel Grant

Sponsoring Organization: Polytechnic

Role: PI

Total Award: \$3,000.00

Date: March 2018 - June 2018.

### **Donations received in support of Discovery**

#### 1. AIFI unrestricted gift to Yang's Lab

Sponsoring Organization: AIFI.com

Role: PI

Total Award: \$20,000.00

## Baijian “Justin” Yang C.V.

Date: Jan, 2021 – Dec 2099

2. Microsoft Azure Research Award CRM:0518935  
Sponsoring Organization: Microsoft Research  
Role: PI  
Total Award: \$5,000.00  
Date: May 25, 2017 - May 24, 2018.  
Notes/Description: *\$5000 Azure credits for research needs.*

### **ENGAGEMENT ACTIVITIES**

#### **Consulting arrangements**

1. Consulting Type: For Profit Organization  
Client: Maryland Technology Development Corporation  
Duration: 2018  
Provided expert opinion on a smartphone innovation proposal
2. Consulting Type: Academic  
Client: Dark Enterprise  
Duration: May 2018 - August 2018  
Reviewed three NSA cybersecurity courses
3. Consulting Type: Non-Governmental Organization (NGO)  
Client: Science and Technology Museum of China  
Duration: May 2018 - July 2018  
Reviewed more than 400 work for an international science fair competition.
4. Consulting Type: Academic  
Client: Ball State University  
Duration: May 2010 - December 2010  
Provide Six Sigma Training to MindPro and Building Better Community (BBC) clients

### **SERVICE ACTIVITIES**

#### **Committee assignments in the department, college, and/or university**

##### *Department*

|             |   |
|-------------|---|
| 2021 – 2023 | Chair, CIT Faculty Affair Committee               |
| 2021 – 2022 | Chair, CIT Cybersecurity Faculty Search Committee |

## Baijian “Justin” Yang C.V.

|                |   |
|----------------|---|
| 2020 – 2021    | Chair, CIT Cybersecurity Faculty Search Committee |
| 2017 – 2018    | Chair, CIT Vote Committee                         |
| 2017 – 2018    | Chair, CIT NET Faculty Search                     |
| 2017 – 2018    | Chair, CIT NET curriculum subcommittee            |
| 2012 – Present | Member, CIT NET curriculum subcommittee           |
| 2014 – 2016    | Member, CIT graduate education committee          |
| 2015 – Present | Member, CIT cybersecurity curriculum subcommittee |
| 2015 – Present | Member, CIT diversity committee                   |
| 2016 – Present | Member, CIT scholarship committee                 |

### *College*

|             |  |
|-------------|--|
| 2024 – 2025 | Chair, SoET School Head Search Committee   |
| 2020 – 2023 | Senator, Purdue Polytechnic  |
| 2021 – 2022 | Senior Faculty Fellow, Purdue Polytechnic RIA,                                     |
| 2018 – 2021 | Faculty Champion, Holistic Safety and Security (HSS)<br>Research Impact Area (RIA) |
| 2019 – 2023 | Sectary, Polytechnic Faculty Grievance Committee                                   |
| 2019 – 2023 | Member, Polytechnic Election Committee   |
| 2015 – 2016 | Member, Polytechnic Transformation Team 4  |
| 2015 – 2016 | Member, Polytechnic Mentorship Committee   |

### *University*

|                |  |
|----------------|--|
| 2021 – Present | Member, Research Leadership Board, CERIAS, Purdue              |
| 2019 – 2022    | Member, CERIAS Interdisciplinary Graduate Program<br>Committee |
| 2020 – 2023    | Member, Library Committee of Purdue University                 |