YAGUANG ZHANG

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EDUCATION

Purdue University, West Lafayette, Indiana, USA
PhD in Electrical and Computer Engineering August 2021
- Thesis **Zhang, Y.**, 2021. *Improved site-specific millimeter-wave channel modeling and simulation for suburban and rural environments*. Purdue University Graduate School. DOI: 10.25394/PGS.15069858.v1.

Purdue University, West Lafayette, Indiana, USA
MSc in Electrical and Computer Engineering May 2015

Tianjin University, Tianjin, P.R. China
BEng in Communication Engineering June 2013
- Thesis title *Design and Simulation of LTE Semi-Persistent Scheduler*

University of South Australia, Adelaide, Australia
Exchange Student February – July 2012

RESEARCH INTERESTS

- UAV-Aided Wireless Communication Systems
- 5G Millimeter-Wave Channel Measurement and Modeling
- Intelligent Transportation System Applications in Digital Agriculture
- Proactive Road Maintenance
- Engineering Education

RESEARCH EXPERIENCE

[RE1] October 2023 – Present. **Clinical Assistant Professor in Online Education**. Department of Agricultural & Biological Engineering and the Department of Agricultural Sciences Education & Communication, Purdue University, West Lafayette, Indiana, USA.

[RE2] September 2021 – September 2023. **Post-Doctoral Research Assistant**. Elmore Family School of Electrical and Computer Engineering, Purdue University, West Lafayette, Indiana, USA.
- *Communications Research Lab*: millimeter-wave propagation measurement, modeling, and simulation for next-generation wireless communications.
- *Wabash Heartland Innovation Network (WHIN)*: coverage simulation for LoRaWAN performance prediction and evaluation.
- *Joint Transportation Research Program (JTRP)*: high-risk road segment identification via sun shadow simulation for proactive snow removal; pavement condition assessment and visualization based on 3D LiDAR and falling weight deflectometer records; automated record keeping for maintenance operations via real-time telematics information.
- *Open Ag Technology and Systems (OATS) Center*: GPS data collection and signal processing for agriculture applications.

[RE3] June 2017 – August 2021. **Graduate Research Assistant**. School of Electrical and Computer Engineering, Purdue University, West Lafayette, Indiana, USA.
- *Open Ag Technology and Systems (OATS) Center*: GPS signal processing for agriculture applications.
- *Communications Research Lab*: millimeter-wave propagation modeling for 5G communications.

[RE4] January 2015 – July 2016. **Graduate Research Assistant**. School of Electrical and Computer Engineering, Purdue University, West Lafayette, Indiana, USA.

- *Joint Transportation Research Program (JTRP)*: algorithm development for recognizing pothole patching activities via GPS records.
- *Open Ag Technology and Systems (OATS) Center*: GPS data collection and agricultural vehicle activity recognition for wheat harvesting.

[RE5] June – July 2012. **Work Experience Program**. Institute for Telecommunications Research, University of South Australia, Mawson Lakes, Australia.

- *Software-Defined Radio*: collaborated with the lab manager to set up and test USRP E110 units.
- *Fading Control, Coding for Hybrid Free Space Optical / RF Channels*: simulated fading channel using Arduino.

TEACHING EXPERIENCE

[TE1] October 2023 – Present. **Clinical Assistant Professor in Online Education**. Department of Agricultural & Biological Engineering and Department of Agricultural Sciences Education & Communication, Purdue University, West Lafayette, Indiana, USA.

- *AGR 333 Data Science for Agriculture (Spring 2025)*: co-instructing the course of 21 students with Professor Bruce Erickson; mentoring two teaching assistants.
- *Development of AGR 333 Data Science for Agriculture (Online)*: developing the online version of the course as the leading instructor.
- *ABE 205 Computations for Engineering Systems (Fall 2024)*: instructed a class of 37 students; mentored two teaching assistants and two peer mentors; expanded teaching content in programming, introduction to data science, meta-learning, signal processing, and artificial intelligence; improved the format of all teaching materials; incorporated interactive learning activities, including Q&A treaties, flipped classroom sessions for assignment explanations (with randomly selected student presenters), make-up midterms, peer-reviewed poster presentations, and ABE 205 challenges; received overwhelmingly positive student feedback on instructor teaching style, with multiple rating items individually averaging 4.9/5.0.
- *Development of GRAD 505 Foundations in Data Science (Online)*: collaborated with two other instructors to develop the course; led the modules for expert interviews, the introduction to data science, version control tools, hands-on projects, and their related quizzes/assignments.
- *AGR 333 Data Science for Agriculture (Spring 2023)*: co-instructed the course of 21 students with Professor Bruce Erickson; mentored two teaching assistants; expanded teaching content in programming, meta-learning, neural networks, circuit design, signal processing, and artificial intelligence; incorporated interactive learning activities, including recitation sessions for lab and assignment Q&A, as well as Q&A treaties; enhanced lab guides and revised all quizzes; and contributed to improving student lab learning experiences, significantly raising the rating for "The instructor effectively answers students' questions" from 4.0/5.0 to 4.7/5.0.

[TE2] June 30, 2023. **Guest Lecturer**. *Introduction to Signal Processing and Data Analysis – My Story about a Magic World*. Research and Extension Experiential Learning for Undergraduates (REEU), Purdue University, West Lafayette, Indiana, USA.

[TE3] February 2023. **Substitute Instructor**. Purdue University, West Lafayette, Indiana, USA.

- *ECE 302 Probabilistic Methods in Electrical and Computer Engineering*: taught two 50-min lectures in large class settings (over 150 registered students).

[TE4] August 2016 – May 2017. **Graduate Teaching Assistant**. Purdue University, West Lafayette, Indiana, USA.

- *ECE 477 Digital Systems Senior Design*: guided and assisted 10 student groups (4 in Fall 2016 and 6 in Spring 2017) with senior design projects.

[TE5] January – May 2016. **Teaching Assistant Trainee**. Purdue University, West Lafayette, Indiana, USA.

- *ENGL 620 Classroom Communication in ESL For Teaching Assistants*: designed and delivered 4 talks on selected topics in electrical and computer engineering.

[TE6] July 2011. **Volunteer Teacher**. Jiantang Village Elementary School, Fenghuang County, Hunan Province, China.

- *College Student Summer Service Program*: Taught at a Hope Project school and co-authored a report on local economy and education.

PUBLICATIONS

Magazines

[M1] **Zhang, Y.**, Love, D.J., Krogmeier, J.V., Anderson, C.R., Heath, R.W. and Buckmaster, D.R., 2021. *Challenges and opportunities of future rural wireless communications*. **IEEE Communications Magazine**, 59(12), pp.16-22. DOI: 10.1109/MCOM.001.2100280. [arXiv preprint]

Journals

[J1] Keshavamurthy, B., **Zhang, Y.**, Anderson, C.R., Michelusi, N., Krogmeier, J.V. and Love, D.J. *Empirical validation of millimeter wave channel models via a V2X measurement campaign*. To be submitted to **IEEE Transactions on Antennas and Propagation**.

[J2] Stofer, K.A., Basir, M.S., Pitts, J., Castiblanco, F. and Zhang, Y., 2025. *Preparing for research engagement at conference career expo booths*. To appear in **University of Florida Institute of Food and Agricultural Sciences (UF/IFAS) Extension Electronic Data Information Source (EDIS) Journal**.

[J3] Basir, M.S., Buckmaster, D., Raturi, A. and **Zhang, Y.**, 2024. **From pen and paper to digital precision: A comprehensive review of on-farm recordkeeping**. Precision Agriculture, 25(5), pp.2643-2682. DOI: 10.1007/s11119-024-10172-7.

[J4] Wang, Y., **Zhang, Y.**, Buckmaster, D.R. and Krogmeier, J.V., 2023. *A methodology for combine performance analyses in wheat harvests with GNSS data*. **Journal of the ASABE**. 66(6): 1391-1414. DOI: 10.13031/ja.15388. [ASABE 2024 Superior Paper Award]

[J5] Jha, S., **Zhang, Y.**, Park, B., Cho, S., Krogmeier, J.V., Bagchi, T. and Haddock, J.E., 2023. *Data-driven web-based patching management tool using multi-sensor pavement structure measurements*. **Transportation Research Record**. DOI: 10.1177/03611981231167161.

[J6] **Zhang, Y.**, Krogmeier, J.V., Anderson, C.R. and Love, D.J., 2023. *Large-scale cellular coverage simulation and analyses for follow-me UAV data relay*. **IEEE Transactions on Wireless Communications**. DOI: 10.1109/TWC.2023.3298546.

[J7] **Zhang, Y.**, Jyoti, S., Anderson, C.R., Michelusi, N., Love, D.J., Sprintson, A. and Krogmeier, J.V., 2021, July. *Improving millimeter-wave channel models for suburban environments with site-specific geometric features*. **Applied Computational Electromagnetics Society (ACES) Journal**, 34(02), pp. 375–378. [Open access]

[J8] **Zhang, Y.**, Krogmeier, J.V., Ault, A. and Buckmaster, D.R., 2020. *APT3: Automated product traceability trees generated from GPS tracks*. **Transactions of the ASABE**, 63(3), pp.571-582. DOI: 10.13031/trans.13384.

[J9] **Zhang, Y.**, Anderson, C.R., Michelusi, N., Love, D.J., Baker, K.R. and Krogmeier, J.V., 2019, June. *Propagation modeling through foliage in a coniferous forest at 28 GHz*. **IEEE Wireless Communications Letters**, vol. 8, no. 3, pp. 901-904. DOI: 10.1109/LWC.2019.2899299. [arXiv preprint]

Conferences

[C1] Naman, A., Zhang, G., **Zhang, Y.** and Krogmeier, J.V., 2025. *Voicing the risk: A multimodal approach to detecting suicidal risk among adolescents*. Submitted to **Interspeech 2025**.

[C2] Naman, A., Ault, A., **Zhang, Y.** and Krogmeier, J.V., 2025. *Automating work orders and tracking winter snow plows and patrol vehicles with telematics data*. In **2025 Transportation Research Board (TRB) 104th Annual Meeting**. TRB. [arXiv preprint]

[C3] Ault, A., **Zhang, Y.**, Krogmeier, J.V. and Buckmaster, D., 2024. *Maximally Interoperable Models (MIMs): A heuristic approach for evaluating interoperability*. In **2024 ASABE Annual International Meeting** (p. 1). American Society of Agricultural and Biological Engineers. DOI: 10.13031/aim.202300917.

[C4] Bailey, J., **Zhang, Y.**, Buckmaster, D.R. and Krogmeier, J.V., 2023. *Leveraging generative AI for farm management*. To appear in **2024 ASABE Annual International Meeting** (p. 1). American Society of Agricultural and Biological Engineers.

[C5] Bailey, J., **Zhang, Y.**, Balmos, A., Castiblanco Rubio, F.A., Zhang, J., Buckmaster, D., Krogmeier, J.V., Allen, M. and Love, D., 2024, July. *Enabling field-level connectivity in rural digital agriculture with cloud-based LoRaWAN*. In **Proceedings of the 16th International Conference on Precision Agriculture (ICPA)**. International Society of

Precision Agriculture. [Open access]

[C6] Buckmaster, D., Basir, M. S., Krogmeier, J.V. and **Zhang, Y.**, 2024, July. *Private simple databases for digital records of contextual events and activities*. In **Proceedings of the 16th International Conference on Precision Agriculture (ICPA)**. International Society of Precision Agriculture. [Open access]

[C7] Harkin, S., Evans, J.T., **Zhang, Y.**, Buckmaster, D., Krogmeier, J.V., Byrne, D. and Glavin, M., 2024, July. *In-field and loading crop: A machine learning approach to classify machine harvesting operating mode*. In **Proceedings of the 16th International Conference on Precision Agriculture (ICPA)**. International Society of Precision Agriculture. [Open access]

[C8] Hollingsworth, M., **Zhang, Y.**, Schumann, T., Anderson, C.R., Cotton, M., Kim, S., Ha, S. and Grunwald, D., 2024, May. *Repurposing cellular reference signals: Accurate RSRP measurements with mobile phones*. In **2024 IEEE International Symposium on Dynamic Spectrum Access Networks (DySPAN)** (pp. 45-50). IEEE. DOI: 10.1109/DySPAN60163.2024.10632813.

[C9] **Zhang, Y.**, Ault, A. and Krogmeier, J.V., 2024, June. *Automated record keeping for statewide winter road maintenance using telematics tracks*. In **2024 IEEE 99th Vehicular Technology Conference (VTC2024-Spring)** (pp. 01-06). IEEE. DOI: 10.1109/VTC2024-Spring62846.2024.10683171.

[C10] Mohamed, A.P., Lee, B., **Zhang, Y.**, Hollingsworth, M., Anderson, C.R., Krogmeier, J.V. and Love, D.J., 2024. *Simulation-enhanced data augmentation for machine learning pathloss prediction*. In **2024 IEEE International Conference on Communications (ICC)** (pp. 1-6). IEEE. DOI: 10.1109/ICC51166.2024.10622237. [arXiv preprint]

[C11] Jha, S., **Zhang, Y.**, Buckmaster, D.R. and Krogmeier, J.V., 2023. *Classifying topographic features into blocks for agricultural field trials*. To appear in **2023 3rd International Electronic Conference on Agronomy**.

[C12] Pathak, H., **Zhang, Y.**, Sprague, N., Buckmaster, D.R., Evans, J., Chaterji, S. and Krogmeier, J.V., 2023, December. *Autonomous navigation in digital agriculture: Using the Segment Anything Model for corn row identification*. In **2023 IEEE India Geoscience and Remote Sensing Symposium (InGARSS)** (pp. 1-4). IEEE. DOI: 10.1109/InGARSS59135.2023.10490329.

[C13] Jha, S., **Zhang, Y.**, Buckmaster, D.R. and Krogmeier, J.V., 2023. *A web-based application leveraging geospatial information to automate on-farm trial design*. To appear in **2023 ASABE Annual International Meeting**. American Society of Agricultural and Biological Engineers.

[C14] Basir, M.S., **Zhang, Y.**, Buckmaster, D.R., Raturi, A. and Krogmeier, J.V., 2023. *Meta Ag: An automatic contextual agricultural metadata collection app*. In **2023 ASABE Annual International Meeting** (p. 1). American Society of Agricultural and Biological Engineers. DOI: 10.13031/aim.202300917.

[C15] Keshavamurthy, B., **Zhang, Y.**, Anderson, C.R., Michelusi, N., Love, D.J. and Krogmeier, J.V., 2023. *Propagation measurements and analyses at 28 GHz via an autonomous beam-steering platform*. In *2023 IEEE International Conference on Communications (ICC)* (pp. 5042-5047). IEEE. DOI: 10.1109/ICC45041.2023.10279397. [arXiv preprint]

[C16] Jha, S., **Zhang, Y.**, Park, B., Cho, S., Krogmeier, J.V., Bagchi, T. and Haddock, J.E., 2023. *Data-driven web-based patching management tool using multi-sensor pavement structure measurements*. In **2023 Transportation Research Board (TRB) 102nd Annual Meeting**. TRB. [arXiv preprint]

[C17] **Zhang, Y.**, Krogmeier, J.V., Anderson, C.R. and Love, D.J., 2022. *Overcoming the digital divide by large-scale coverage analyses for mmWave cellular networks*. In **2022 56th Asilomar Conference on Signals, Systems, and Computers** (pp. 1190-1194). IEEE. DOI: 10.1109/IEEECONF56349.2022.10051865. [Virtual presentation]

[C18] Keshavamurthy, B., **Zhang, Y.**, Anderson, C.R., Michelusi, N., Krogmeier, J.V. and Love, D.J., 2022. *A robotic antenna alignment and tracking system for millimeter wave propagation modeling*. In **2022 United States National Committee of URSI National Radio Science Meeting (USNC-URSI NRSM)** (pp. 145-146). IEEE. DOI: 10.23919/USNC-URSINRSM57467.2022.9881448. [arXiv preprint]

[C19] **Zhang, Y.**, Jha, S., Bullock, D.M. and Krogmeier, J.V., 2021, September. *Generating dynamic prescription maps for winter road treatment via sun-shadow simulation*. In **2021 IEEE International Intelligent Transportation Systems Conference (ITSC)** (pp. 3387-3392). IEEE. DOI: 10.1109/ITSC48978.2021.9565055. [Virtual presentation]

[C20] Neustedter, A.J., Arakawa, T., **Zhang, Y.**, Castiblanco, F.A., Layton, A., Balmos, A., Ault, A., Krogmeier, J.V. and Buckmaster, D.R., 2021. *Enabling visualization and processing of location-based data via OADA's client-selectable live data graphs*. In **2021 ASABE Annual International Virtual Meeting** (p. 1). American Society of Agricultural

and Biological Engineers. DOI: 10.13031/aim.202101126.

[C21] **Zhang, Y.**, Tan, J.A., Dorbert, B.M., Anderson, C.R. and Krogmeier, J.V., 2020, December. *Simulation-aided measurement-based channel modeling for propagation at 28 GHz in a coniferous forest*. In **2020 IEEE Global Communications Conference (GLOBECOM)** (pp. 1-6). IEEE. DOI: 10.1109/GLOBECOM42002.2020.9322386. [Virtual presentation]

[C22] **Zhang, Y.**, Arakawa, T., Krogmeier, J.V., Anderson, C.R., Love, D.J. and Buckmaster, D.R., 2020, June. *Large-scale cellular coverage analyses for UAV data relay via channel modeling*. In **2020 IEEE International Conference on Communications (ICC)** (pp. 1-6). IEEE. DOI: 10.1109/ICC40277.2020.9149403. [Virtual presentation]

[C23] **Zhang, Y.**, Krogmeier, J.V. and Buckmaster, D.R., 2019. *A probabilistic model for estimating harvested areas via GPS tracks*. To appear in **2019 ASABE Annual International Meeting**. American Society of Agricultural and Biological Engineers.

[C24] Wang, Y., **Zhang, Y.**, Balmos, A., Buckmaster, D.R. and Krogmeier, J.V., 2019. *A tutorial on wireless communication protocol selection for digital agricultural applications*. To appear in **2019 ASABE Annual International Meeting**. American Society of Agricultural and Biological Engineers.

[C25] Wang, Y., **Zhang, Y.**, Buckmaster, D.R. and Krogmeier, J.V., 2019. *Combine harvester unloading event inference using GPS data*. In **2019 ASABE Annual International Meeting** (p. 1). American Society of Agricultural and Biological Engineers. DOI: 10.13031/aim.201901286.

[C26] **Zhang, Y.**, Balmos, A., Ault, A., Buckmaster, D.R. and Krogmeier, J.V., 2018. *Generating product traceability trees for harvesting from GPS tracks*. In **2018 ASABE Annual International Meeting** (p. 1). American Society of Agricultural and Biological Engineers. DOI: 10.13031/aim.201800628.

[C27] Lindsay, A.M., Wang, Y., Noel, S., **Zhang, Y.**, Krogmeier, J.V. and Buckmaster, D.R., 2018. *CAN-based forage yield mapping*. In **2018 ASABE Annual International Meeting** (p. 1). American Society of Agricultural and Biological Engineers. DOI: 10.13031/aim.201801016.

[C28] Buckmaster, D.R., Krogmeier, J.V., Ault, A., Noel, S., Wang, Y., **Zhang, Y.**, Layton, A. and Balmos, A., 2018, June. *Use cases for real time data in agriculture*. In **Proceedings of the 14th International Conference on Precision Agriculture (ICPA)**. International Society of Precision Agriculture. [Open access]

[C29] **Zhang, Y.**, Love, D.J., Michelusi, N., Krogmeier, J.V., Jyoti, S., Sprintson, A. and Anderson, C.R., 2018, March. *Improving millimeter-wave channel models for suburban environments with site-specific geometric features*. In **2018 International Applied Computational Electromagnetics Society Symposium (ACES)** (pp. 1-2). IEEE. DOI: 10.23919/ROPACES.2018.8364140.

[C30] **Zhang, Y.**, Jyoti, S., Anderson, C.R., Love, D.J., Michelusi, N., Sprintson, A. and Krogmeier, J.V., 2018, May. *28-GHz channel measurements and modeling for suburban environments*. In **2018 IEEE International Conference on Communications (ICC)** (pp. 1-6). IEEE. DOI: 10.1109/ICC.2018.8422820.

[C31] **Zhang, Y.**, Balmos, A., Krogmeier, J.V. and Buckmaster, D.R., 2017. *Dynamic high-precision field shape generation via combine GPS tracks*. In **2017 ASABE Annual International Meeting** (p. 1). American Society of Agricultural and Biological Engineers. DOI: 10.13031/aim.201700809.

[C32] **Zhang, Y.**, Ault, A., Krogmeier, J.V. and Buckmaster, D.R., 2017. *Activity recognition for harvesting via GPS tracks*. In **2017 ASABE Annual International Meeting** (p. 1). American Society of Agricultural and Biological Engineers. DOI: 10.13031/aim.201700813.

[C33] Layton, A.W., **Zhang, Y.**, Krogmeier, J.V. and Buckmaster, D.R., 2017. *Determining harvesting efficiency via multiple combine GPS logs*. In **2017 ASABE Annual International Meeting** (p. 1). American Society of Agricultural and Biological Engineers. DOI: 10.13031/aim.201700816.

[C34] **Zhang, Y.**, Balmos, A., Krogmeier, J.V. and Buckmaster, D.R., 2015, September. *Working zone identification for specialized micro transportation systems using GPS tracks*. In **2015 IEEE 18th International Conference on Intelligent Transportation Systems (ITSC)** (pp. 1779-1784). IEEE. DOI: 10.1109/ITSC.2015.289.

Technical Reports

[R1] Naman, A., **Zhang, Y.**, Ault, A. and Krogmeier, J.V., 2024. *Automated record keeping for maintenance operations via tracking of maintenance vehicles using telematics tracks*. To appear in **Joint Transportation Research Program (JTRP) Technical Report**. Purdue University, West Lafayette, Indiana.

[R2] Jha, S., **Zhang, Y.**, Bagchi, T., Balmos, A., Park, B., Haddock, J. E., Cho, S., & Krogmeier, J.V. (2024). *Comprehensive pavement patching tools and web-based software for pavement condition assessment and visualization*. **Joint Transportation Research Program Publication (JTRP) Technical Reports** No. FHWA/IN/JTRP-2021/27. Purdue University, West Lafayette, Indiana. DOI: 10.5703/1288284317770.

[R3] Mahlberg, J., **Zhang, Y.**, Jha, S., Mathew, J.K., Li, H., Desai, J., Kim, W., McGuffey, J., Wells, T., Krogmeier, J.V. and Bullock, D.M., 2021. *Development of an intelligent snowplow truck that integrates telematics technology, roadway sensors, and connected vehicle*. **Joint Transportation Research Program Publication (JTRP) Technical Reports** No. FHWA/IN/JTRP-2021/27. Purdue University, West Lafayette, Indiana. DOI: 10.5703/1288284317355.

[R4] **Zhang, Y.**, Jyoti, S., Anderson, C.R., Love, D.J., Michelusi, N., Sprintson, A. and Krogmeier, J.V., 2017, November. *28-Ghz channel measurements and modeling for suburban environments*. **Department of Electrical and Computer Engineering Technical Reports** No. TR-ECE-17-07. Purdue University, West Lafayette, Indiana. [Open access]

[R5] Sadeghi, L., **Zhang, Y.**, Balmos, A., Krogmeier, J.V. and Haddock, J.E., 2016. *Algorithm and software for proactive pothole repair*. **Joint Transportation Research Program Publication (JTRP) Technical Reports** No. FHWA/IN/JTRP-2016/14. Purdue University, West Lafayette, Indiana. DOI: 10.5703/1288284316337.

Data Sets

[S1] Keshavamurthy, B. and **Zhang, Y.**, 2022. *Propagation measurements and analyses at 28GHz on NSF POWDER*. (v1.0). *IEEE International Conference on Communications (ICC)*, Rome, Italy. **Zenodo**. DOI: 10.5281/zenodo.7178597.

[S2] **Zhang, Y.** and Krogmeier, J.V., 2021. *Combine Kart Truck GPS data archive*. (Version 1.2). **Purdue University Research Repository**. DOI: 10.4231/XBG9-P763.

HONORS AND AWARDS

[A1] 2024. **Outstanding Engineering Teachers (Fall 2024)**. College of Engineering, Purdue University.

[A2] 2024. **ASABE 2024 Superior Paper Award**. *A Methodology for Combine Performance Analyses in Wheat Harvests with GNSS Data*. Journal of the ASABE. ASABE Information Technology, Sensors, and Control Systems Technical Community.

[A3] 2024. **Third Place** (out of 24 proposals worldwide). *10 Big Ideas Competition*, Science-i: Bridging Worlds Competition and Workshop 2024, Science-i.

[A4] 2023. **High-Quality Review**. Acknowledged by the Editor in Chief. IEEE Vehicular Technology Magazine. IEEE Vehicular Technology Society (VTS).

[A5] 2021. **Student Travel Support**. 24th IEEE International Intelligent Transportation Systems Conference (ITSC). IEEE Intelligent Transportation Systems Society (ITSS).

[A6] 2020. **Student Poster Competition First Prize**. *Dynamic High-Precision Field Shape Generation via Combine GPS Tracks*. Unlocking the Agricultural Data Revolution. Foundation for Food & Agriculture Research (FFAR).

[A7] 2020. **Student Poster Competition Honorary Mention Prize**. *Generating Product Traceability Trees for Harvesting from GPS Tracks*. Unlocking the Agricultural Data Revolution. Foundation for Food & Agriculture Research (FFAR).

[A8] 2020. **Student Poster Competition Honorary Mention Prize**. *Large-Scale Cellular Coverage Analyses for UAV Data Relay via Channel Modeling*. Unlocking the Agricultural Data Revolution. Foundation for Food & Agriculture Research (FFAR).

[A9] 2019. **Student Travel Support**. 6th Millimeter-Wave Research Coordination Networks (mmW RCN) Workshop. National Science Foundation (NSF).

[A10] 2018. **Outstanding Student Poster Presentation Award**. *Generating Product Traceability Trees for Harvesting from GPS Tracks*. ASABE Annual International Meeting.

[A11] 2015. **Student Travel Scholarship**. 18th IEEE International Intelligent Transportation Systems Conference (ITSC). IEEE Intelligent Transportation Systems Society (ITSS).

[A12] 2012. **China National Scholarship**. Chinese Government Scholarship. Tianjin University.

[A13] 2012. **Dean's Award**. School of Electronic Information Engineering. Tianjin University.

[A14] 2012. **Endeavour Awards**. Australian Government Scholarship. University of South Australia.

[A15] 2011. **China National Scholarship**. Chinese Government Scholarship. Tianjin University.
[A16] 2011. **Dean's Award**. School of Electronic Information Engineering. Tianjin University.
[A17] 2011. **Tianjin Area Undergraduate Physics Competition First Prize** (top 5%).
[A18] 2010. **China National Scholarship**. Chinese Government Scholarship. Tianjin University.

MEDIA COVERAGE

[MC1] March 2025. **Using Sun Shadows and Simulations to Combat Snowy Roads**. To appear in *College of Agriculture 2025 News & Stories*. Purdue University.
[MC2] February 2025. **Education Spotlight: Data Science Class Designed to Challenge Students**. *Institute for Digital and Advanced Agricultural Systems (IDAAS) Newsletter, February 2025*. Purdue University. Available at: [Link] | [Mirror].
[MC3] May 2024. **Faculty Spotlight**. *Digital Agriculture Newsletter, May 2024*. Purdue University. Available at: [Link] | [Mirror].
[MC4] April 2024. **Faculty Highlights in Online Education**. *Ag Online Newsletter, Spring 2024*. Purdue University. Available at: [Link] | [Mirror].
[MC5] January 2024. **The College of Agriculture Welcomes 11 New Faculty Members**. *College of Agriculture 2024 News & Stories*. Purdue University. Available at: [Link] | [Mirror].

GRANTS

[G1] February 1, 2025 – January 31, 2028. **PI**. *CableLabs' Spectrum Monitoring Project*. Cable Television Laboratories, Inc. (CableLabs).
Total amount: **TBD**
Budget for equipment: **$7,870**

[G2] January 1, 2025 – June 30, 2026. **PI**. *Tractor Auto Pilot (TAP): Innovating Farmer-Centric Solutions for Automating Agricultural Vehicles with Advanced Rural Wireless and Physical AI*. Office of Research's Type II Laboratory and University Core Facility Research Equipment Program. Purdue University, West Lafayette, Indiana, USA.
Total amount: **$209,707**

[G3] January 1, 2025 – August 31, 2030. **Workforce Development Co-Lead**. *NSF Engineering Research Center for the Internet of Things for Precision Agriculture (IoT4Ag)*. National Science Foundation (NSF) Award EEC-1941529.
Budget for workforce development (January 2025 – August 2030): **$480,532**
Total amount (September 2025 – August 2030): **$5,533,527**

[G4] January 1, 2025 – December 31, 2025. **PI**. *UAV6G-AgriNet: Field-Level Connectivity for Autonomous Tractors in Sustainable Agriculture*. Nokia Donations Program. Nokia Solutions and Networks Oy, Karakaari 7, Espoo, FI-02610, Finland.
Total amount: **EUR 60,000**

[G5] January 1, 2025 – December 31, 2025. **PI**. *Tree of Tables (ToT): A Maximally Interoperable Model for Producer-Centric Data Implemented as Two NAPDC Use Cases*. National Agricultural Producer Data Cooperative (NAPDC) Convening Awards, University of Nebraska-Lincoln. National Institute of Food and Agriculture (NIFA), Grant No. 2024-77039-43724, Subaward No. 25-6231-0439-008.
Total amount: **$58,105**

[G6] September 1, 2024 – August 31, 2026. **Co-PI**. *Enhancing Pavement Instrumentation and Monitoring: A Novel Edge-First, Network Level Solution for Pavement and Roadside Sensors and Live Data Visualization*. Indiana Department of Transportation (INDOT) Joint Transportation Research Program (JTRP) SPR-4918.
Total amount: **$350,000**

[G7] October 1, 2023 – September 30, 2026. **PI**. *Startup Funds from the Agricultural and Biological Engineering (ABE) Department*. Purdue University, West Lafayette, Indiana, USA.
Total amount: **$40,000**

[G8] January 1, 2022 – March 31, 2025. **Co-PI**. *Automated Record Keeping for Maintenance Operations via Tracking of Maintenance Vehicles using Telematics Tracks*. Indiana Department of Transportation (INDOT) Joint Transportation Research Program (JTRP) SPR-4605.

Total amount: **$151,998**

SELECTED PRESENTATIONS

Invited Talks

[I1] February 6, 2025. *Machine Learning for Channel Modeling: Enhancing Accuracy and Generalization*. **Open Ag Technology and Systems Center Conference 2025 (OATSCON25)**. Beck Agricultural Center, Agronomy Center for Research and Education (ACRE), Purdue University, West Lafayette, Indiana, USA.

[I2] October 10, 2024. *Data Science in Digital Agriculture: Challenges in Data Collection, Rural Connectivity, and Analysis*. **ABE 694 Graduate Seminar Research Talk**. Purdue University, West Lafayette, Indiana, USA.

[I3] September 6, 2024. *Signal Processing in Digital Agriculture: Data Collection, Telecommunications, and Analysis*. **Beginnings: Experiential Learning on Digital Agriculture and Plant Phenotyping Technologies (DAPPT) Workshop**. Purdue University, West Lafayette, Indiana, USA.

[I4] July 15, 2024. *Brief Introduction to Signal Processing, Data Science, and AI with Real-Life Applications*. **Internet of Things for Precision Agriculture (IoT4Ag) Research Experience for Teachers (RET) Program**. Delivered remotely.

[I5] May 7, 2024. *Automating Large-Scale Site-Specific Solar Resource Maps*. **Science-i: Bridging Worlds Competition and Workshop 2024**. Purdue University, West Lafayette, Indiana, USA.

[I6] April 12, 2024. *Beyond Cellular: Enabling Field Connectivity with Novel Network Solutions*. **Internet of Things for Precision Agriculture (IoT4Ag) Thrust 2 Meeting**. Purdue University, West Lafayette, Indiana, USA.

[I7] October 30, 2022. *Overcoming the Digital Divide by Large-Scale Coverage Analyses for mmWave Cellular Networks*. **2022 IEEE 56th Asilomar Conference on Signals, Systems, and Computers**. Pacific Grove, California, USA. [Virtual presentation]

[I8] February 19, 2020. *Large-Scale Cellular Coverage Analyses for UAV Data Relay via Channel Modeling*. **2020 Global City Teams Challenge (GCTC) Smart Ag & Rural Supercluster Workshop**. Phoenix, Arizona, USA.

[I9] February 13, 2019. *Propagation Modeling Through Foliage in a Coniferous Forest at 28 GHz*. **National Institute of Standards and Technology (NIST)/Institute for Telecommunication Sciences (ITS) Propagation Focus Group Guest Talk**. Delivered remotely.

[I10] January 31, 2018. *28-GHz Channel Measurements and Modeling for Suburban Environments*. **National Institute of Standards and Technology (NIST)/Institute for Telecommunication Sciences (ITS) Propagation Focus Group Guest Talk**. Delivered remotely.

Talks

[T1] June 27, 2024. *Automated Record Keeping for Statewide Winter Road Maintenance Using Telematics Tracks*. **2024 IEEE 99th Vehicular Technology Conference (VTC2024-Spring)**. Singapore.

[T2] February 24, 2023. *Automating Work Orders for Winter Weather Operations Using GPS Tracks*. **2023 Open Ag Technology and Systems Center Conference (OATSCON23)**. Purdue University, West Lafayette, Indiana, USA. Presented by my colleague Aaron Ault (Email: ault@purdue.edu).

[T3] February 24, 2023. *Large-Scale Cellular Coverage Analyses for UAV Data Relay via Channel Modeling*. **2023 Open Ag Technology and Systems Center Conference (OATSCON23)**. Purdue University, West Lafayette, Indiana, USA. Delivered virtually.

[T4] March 15, 2023. *Automating Work Orders Using GPS Tracks*. **109th Purdue Road School Transportation Conference and Expo**. Purdue University, West Lafayette, Indiana, USA.

[T5] January 10, 2023. *Data-Driven, Web-Based Patching Management Tool Using Multi-Sensor Pavement Structure Measurements*. **2023 Transportation Research Board (TRB) 102nd Annual Meeting**. Presented by my colleague Sneha Jha (Email: jha16@purdue.edu).

[T6] October 25, 2022. *Web-Based Patching Management Tool using Multi-Sensor Pavement Condition Measurements*. **31st Annual FWD Users Group Meeting**. Reno, Nevada, USA. Presented by my colleague Sneha Jha (Email: jha16@purdue.edu).

[T7] March 15, 2022. *Comprehensive Pavement Patching Tools and Web-Based Software for Pavement Condition Assessment and Visualization*. **108th Purdue Road School Transportation Conference and Expo**. Purdue University, West Lafayette, Indiana, USA. Co-presented with my colleague Sneha Jha (Email: jha16@purdue.edu).

[T8] December 21, 2021. *Rural Wireless Propagation Modeling*. **Internet of Things for Precision Agriculture (IoT4Ag) Industrial/Practitioner Advisory Board (IPAB) Meeting**. Delivered remotely.

[T9] September 22, 2021. *Generating Dynamic Prescription Maps for Winter Road Treatment via Sun-Shadow Simulation*. **2021 IEEE International Intelligent Transportation Systems Conference (ITSC)**. Hybrid conference. Indianapolis, Indiana, USA. Delivered both in person and virtually. [Virtual presentation]

[T10] March 25, 2021. *Automatic Field Records*. **2021 Open Ag Technology and Systems Center Conference (OATSCON21)**. Virtual conference. Purdue University, West Lafayette, Indiana, USA. Delivered remotely.

[T11] December 9, 2020. *Simulation-Aided Measurement-Based Channel Modeling for Propagation at 28 GHz in a Coniferous Forest*. **2020 IEEE Global Communications Conference (GLOBECOM)**. Hybrid conference. Taipei, Taiwan. Delivered virtually. [Virtual presentation]

[T12] November 19, 2020. *GPS Data Analyses for Wheat Harvesting*. **2020 AgGateway Virtual Annual Conference**. Delivered remotely.

[T13] July 8, 2020. *Large-Scale Cellular Coverage Analyses for UAV Data Relay via Channel Modeling*. **2020 AgGateway Mid-Year Meeting**. Virtual conference. Delivered virtually. [Virtual presentation]

[T14] June 9, 2020. *Large-Scale Cellular Coverage Analyses for UAV Data Relay via Channel Modeling*. **2020 IEEE International Conference on Communications (ICC)**. Virtual conference. Delivered virtually. [Virtual presentation]

[T15] August 29, 2019. *Activity Recognition for Harvesting via GPS Tracks*. **2019 Open Ag Technology and Systems Center (OATS) Showcase Reception for Infosys Limited**. Purdue University, West Lafayette, Indiana, USA.

[T16] August 8, 2019. *Activity Recognition for Harvesting via GPS Tracks*. **2019 Open Ag Technology and Systems Center (OATS) Showcase Reception for Case New Holland Industrial (CHI) Inc**. Purdue University, West Lafayette, Indiana, USA.

[T17] July 10, 2019. *A Probabilistic Model for Estimating Harvested Areas via GPS Tracks*. **2019 ASABE Annual International Meeting (AIM)**. Boston, Massachusetts, USA.

[T18] February 25, 2019. *Generating Product Traceability Trees for Harvesting from GPS Tracks*. **2019 Open Ag Technology and Systems Center Conference (OATSCON19)**. Chicago, Illinois, USA.

[T19] January 9, 2019. *Channel Model Comparison for 28 GHz Millimeter Wave in Suburban and Rural Environments*. **United States National Committee (USNC) for the International Union of Radio Science (URSI) National Radio Science Meeting (NRSM)**. Boulder, Colorado, USA. Presented by Prof. Christopher R. Anderson (Email: canderso@usna.edu).

[T20] May 23, 2018. *28-GHz Channel Measurements and Modeling for Suburban Environments*. **2018 IEEE International Conference on Communications (ICC)**. Kansas City, Missouri, USA.

[T21] March 24, 2018. *Improving Millimeter-Wave Channel Models with Site-Specific Geometric Features*. **2018 International Applied Computational Electromagnetics Society (ACES) Symposium**. Denver, Colorado, USA.

[T22] July 17, 2017. *Activity Recognition for Harvesting via GPS Tracks*. **2017 ASABE Annual International Meeting (AIM)**. Spokane, Washington, USA.

[T23] July 17, 2017. *Determining Harvesting Efficiency via Multiple Combine GPS Logs*. **2017 ASABE Annual International Meeting (AIM)**. Spokane, Washington, USA.

[T24] September 16, 2015. *Working Zone Identification for Specialized Micro Transportation Systems Using GPS Tracks*. **2015 IEEE 18th International Conference on Intelligent Transportation Systems (ITSC)**. Las Palmas de Gran Canaria, Spain.

Poster Presentations

[P1] March 7, 2025. *Beyond Cellular: Enabling Field Connectivity with Novel Network Solutions*. **2025 Joint Poster Session & Networking Gathering – Colleges of Ag & Engineering**. Marriott Hall, Purdue University, West Lafayette, Indiana, USA.

[P2] March 7, 2025. *Overcoming the Digital Divide by Large-Scale Coverage Analyses for mmWave Cellular Networks*.

2025 Joint Poster Session & Networking Gathering – Colleges of Ag & Engineering. Marriott Hall, Purdue University, West Lafayette, Indiana, USA.

[P3] February 19, 2025. *Automating Work Orders for Winter Weather Operations Using GPS Tracks*. **2025 Joint Transportation Research Program (JTRP) Poster Session**. Indiana Government Center South Atrium, Indianapolis, Indiana, USA.

[P4] February 19, 2025. *Generating Dynamic Prescription Maps for Winter Road Treatment via Sun Shadow Simulation*. **2025 Joint Transportation Research Program (JTRP) Poster Session**. Indiana Government Center South Atrium, Indianapolis, Indiana, USA.

[P5] February 19, 2025. *Automating Work Orders and Tracking Winter Snow Plows and Patrol Vehicles with Telematics Data*. **2025 Joint Transportation Research Program (JTRP) Poster Session**. Indiana Government Center South Atrium, Indianapolis, Indiana, USA. Presented by my student Anugunj Naman (Email: anaman@purdue.edu).

[P6] February 19, 2025. *Precision, Safety, and Automation: A Cutting-Edge Research Platform for Vehicle Automation & Smart Infrastructure*. **2025 Joint Transportation Research Program (JTRP) Poster Session**. Indiana Government Center South Atrium, Indianapolis, Indiana, USA. Presented by my student Anugunj Naman (Email: anaman@purdue.edu).

[P7] December 11, 2024. **Overcoming the Digital Divide by Large-Scale Coverage Analyses for mmWave Cellular Networks**. *Advancing the Digital Technology Revolution for Agriculture*. Institute for Digital and Advanced Agricultural Systems (IDAAS). Purdue University, West Lafayette, Indiana, USA.

[P8] March 6, 2024. *Beyond Cellular: Enabling Field Connectivity with Novel Network Solutions*. *Center for Digital Agriculture (CDA) Conference 2024: Future of Digital Agriculture*. University of Illinois Urbana-Champaign. iHotel and Illinois Conference Center, Champaign, Illinois, USA.

[P9] December 12, 2023. *Autonomous Navigation in Digital Agriculture: Using the Segment Anything Model for Corn Row Identification*. **2023 IEEE India Geoscience and Remote Sensing Symposium (InGARSS)**. Bengaluru, Karnataka, India. Presented by my colleague Harsh Pathak (Email: pathak19@purdue.edu). [First Prize for Research Track - Poster Multimedia Sessions]

[P10] October 25, 2023. *Beyond Cellular: Enabling Field Connectivity with Novel Network Solutions*. **2023 Internet of Things for Precision Agriculture (IoT4Ag) National Science Foundation (NSF) Site Visit.** University of Pennsylvania, Philadelphia, Pennsylvania, USA.

[P11] March 31, 2023. *Automating Work Orders for Winter Weather Operations Using GPS Tracks*. **College of Agriculture & College of Engineering Joint Poster Session: A Networking Gathering**. Marriott Hall, Purdue University, West Lafayette, Indiana, USA.

[P12] March 31, 2023. *Large-Scale Cellular Coverage Analyses for UAV Data Relay via Channel Modeling*. **College of Agriculture & College of Engineering Joint Poster Session: A Networking Gathering**. Marriott Hall, Purdue University, West Lafayette, Indiana, USA.

[P13] March 2, 2023. *Development of an Automatic Contextual Agricultural Metadata Collection App*. **Graduate Industrial Research Symposium (GIRS) 2023**. Purdue University, West Lafayette, Indiana, USA. Presented by my colleague Md. Samiul Basir (Email: mbasir@purdue.edu). [First Place in Creating the Farm of the Future]

[P14] February 21, 2023. *Comprehensive Pavement Patching Tools and Web-Based Software for Pavement Condition Assessment and Visualization*. **2023 Joint Transportation Research Program (JTRP) Poster Session**. Indiana Government Center South Atrium, Indianapolis, Indiana, USA. Presented by my colleague Sneha Jha (Email: jha16@purdue.edu).

[P15] February 21, 2023. *Automating Work Orders for Winter Weather Operations Using GPS Tracks*. **2023 Joint Transportation Research Program (JTRP) Poster Session**. Indiana Government Center South Atrium, Indianapolis, Indiana, USA.

[P16] September 9, 2022. *Open-Agriculture Technology and Systems (OATS) Center*. **College of Agriculture Graduate Student Welcoming and Networking Event**. Purdue University, West Lafayette, Indiana, USA. Presented by my colleague Harsh Pathak (Email: pathak19@purdue.edu).

[P17] February 24, 2022. *Comprehensive Pavement Patching Algorithm for Web-Based Pavement Condition Assessment and Visualization Application*. **2022 Joint Transportation Research Program (JTRP) Poster Session**. Indiana Government Center South Atrium, Indianapolis, Indiana, USA. Presented by my colleague Sneha Jha (Email:

jha16@purdue.edu).

[P18] February 24, 2022. *Generating Dynamic Prescription Maps for Winter Road Treatment via Sun Shadow Simulation*. **2022 Joint Transportation Research Program (JTRP) Poster Session**. Indiana Government Center South Atrium, Indianapolis, Indiana, USA.

[P19] October 12, 2021. *Wireless Powered Communication Over Inductively Coupled Circuit*. **Internet of Things for Precision Agriculture (IoT4Ag) Year-1 National Science Foundation (NSF) Site Visit**. University of Pennsylvania, Philadelphia, Pennsylvania, USA. Co-presented with my colleague Tomohiro Arakawa (Email: tomohiro@tarakawa.net). Delivered remotely.

[P20] October 12, 2021. *Large-Scale Cellular Coverage Analyses for UAV Data Relay via Channel Modeling*. **Internet of Things for Precision Agriculture (IoT4Ag) Year-1 National Science Foundation (NSF) Site Visit**. University of Pennsylvania, Philadelphia, Pennsylvania, USA. Delivered remotely.

[P21] June 10, 2021. *Wireless Powered Communication Over Inductively Coupled Circuits for UAV Data Relay via Channel Modeling*. **Internet of Things for Precision Agriculture (IoT4Ag) Summer 2021 Annual Meeting**. University of Pennsylvania, Philadelphia, Pennsylvania, USA. Co-presented with my colleague Tomohiro Arakawa (Email: tomohiro@tarakawa.net). Delivered remotely.

[P22] June 10, 2021. *Large-Scale Cellular Coverage Analyses for UAV Data Relay via Channel Modeling*. **Internet of Things for Precision Agriculture (IoT4Ag) Summer 2021 Annual Meeting**. University of Pennsylvania, Philadelphia, Pennsylvania, USA. Delivered remotely.

[P23] September 25, 2020. *Dynamic High-Precision Field Shape Generation via Combine GPS Tracks*. **2020 Unlocking the Agricultural Data Revolution**. University of Minnesota, Minneapolis, Minnesota, USA. [Student Poster Competition First Prize] [Announcement archive]

[P24] September 24, 2020. *Large-Scale Cellular Coverage Analyses for UAV Data Relay via Channel Modeling*. **2020 Unlocking the Agricultural Data Revolution**. University of Minnesota, Minneapolis, Minnesota, USA. [Student Poster Competition Honorary Mention Prize]

[P25] September 24, 2020. *Generating Product Traceability Trees for Harvesting from GPS Tracks*. **2020 Unlocking the Agricultural Data Revolution**. University of Minnesota, Minneapolis, Minnesota, USA. [Student Poster Competition Honorary Mention Prize]

[P26] July 30, 2019. *Wireless Connectivity for Agricultural IoT Devices*. **2019 Facebook Connectivity Lab Summer Workshop on Rural Connectivity**. Menlo Park, California, USA. Presented by my colleague Tomohiro Arakawa (Email: tomohiro@tarakawa.net).

[P27] July 23, 2019. *Propagation Modeling Through Foliage in a Coniferous Forest at 28 GHz*. **6th National Science Foundation (NSF) Millimeter-Wave Research Coordination Networks (mmW RCN) Workshop**. National Institute of Standards and Technology (NTIA), Boulder, Colorado, USA.

[P28] February 25, 2019. *Dynamic High-Precision Field Shape Generation via Combine GPS Tracks*. **2019 Open Ag Technology and Systems Center Conference (OATSCON19)**. Chicago, Illinois, USA.

[P29] February 25, 2019. *Generating Product Traceability Trees for Harvesting from GPS Tracks*. **2019 Open Ag Technology and Systems Center Conference (OATSCON19)**. Chicago, Illinois, USA.

[P30] July 31, 2018. *Generating Product Traceability Trees for Harvesting from GPS Tracks*. **2018 ASABE Annual International Meeting (AIM)**. Detroit, Michigan, USA. [Outstanding Student Poster Presentation Award]

[P31] July 31, 2018. *Activity Recognition for Harvesting via GPS Tracks using Neural Networks*. **2018 ASABE Annual International Meeting (AIM)**. Detroit, Michigan, USA.

[P32] January 18, 2018. *Improving Millimeter-Wave Channel Models with Site-Specific Geometric Features*. **3rd National Science Foundation (NSF) Millimeter-Wave Research Coordination Networks (mmW RCN) Workshop**. Tucson, Arizona, USA.

[P33] November 11, 2017. *Dynamic High-Precision Field Shape Generation via Combine GPS Tracks*. **2017 Open Ag Technology and Systems Center Annual Conference (OATSCON17)**. Chicago, Illinois, USA.

[P34] July 18, 2017. *Dynamic High-Precision Field Shape Generation via Combine GPS Tracks*. **2017 ASABE Annual**

International Meeting (AIM). Spokane, Washington, USA.

Live Demos

[D1] March 19, 2025. *Precision, Safety, and Automation: A Cutting-Edge Research Platform for Vehicle Automation & Smart Infrastructure*. **Polaris Showcase, 2025 Purdue Road School**. The Clapping Circle, Academy Park, Purdue University, West Lafayette, Indiana, USA.

[D2] March 7, 2025. *Hands-On Introduction to Programming and Robotics for 4-H Youth with Elecfreaks micro:bit Smart Cutebot*. **2025 Joint Poster Session & Networking Gathering – Colleges of Ag & Engineering**. Marriott Hall, Purdue University, West Lafayette, Indiana, USA.

[D3] February 1, 2025. *Robo Racers: Smart Cutebot Track Challenge*. **S.T.E.P. N2 STEM: Striving Towards Educational Progress in Social/Science, Technology, Engineering and Math**. College of Health and Human Sciences. Lyles-Porter Hall, Purdue University, West Lafayette, Indiana, USA.

[D4] December 20, 2024. *Dataspeed By-Wire Kit on Polaris Ranger: A Research Platform for Vehicle Automation & Smart Infrastructure.* **Polaris Showcase at INDOT**. *Indiana Department of Transportation (INDOT) Research and Development,* West Lafayette, Indiana, USA.

[D5] March 15, 2023. *Automating Work Orders Using GPS Tracks*. **109th Purdue Road School Transportation Conference and Expo**. Purdue University, West Lafayette, Indiana, USA.

[D6] March 15, 2022. *Patching Management Tool (PMT): A Comprehensive Web App for Pavement Condition Assessment and Visualization*. **108th Purdue Road School Transportation Conference and Expo**. Purdue University, West Lafayette, Indiana, USA. Co-presented with my colleague Sneha Jha (Email: jha16@purdue.edu).

[D7] August 23, 2019. *ISOBlue HD: An Open-Source Ag Data Collection Platform with Live Video Streaming Capability*. **2019 Joint Transportation Research Program (JTRP) Executive Committee Meeting**. Indiana Corn and Soybean Innovation Center, Purdue University, West Lafayette, Indiana, USA. Co-presented with my colleague Yang Wang (Email: wang701@purdue.edu).

[D8] September 13, 2016. *College of Engineering Space and Data Mapping Program: Live Demo for Purdue Room Info Viewer (Stage 3)*. **College of Engineering Space Committee Meeting**. Purdue University, West Lafayette, Indiana, USA. [Demonstration video]

PROFESSIONAL EXPERIENCE

Advisory Committee Service

[AC1] 2025 – Present. **Kwabena Bayity** (kbayity@nmsu.edu). *Ph.D. student*, Department of Agricultural Sciences Education & Communication, Purdue University.

[AC2] 2024 – Present. **Joshua Karl Bailey** (baile343@purdue.edu). *Master's student*, Department of Agricultural & Biological Engineering, Purdue University.

[AC3] 2024 – Present. **Manish Kumar Krishne Gowda** (mkrishne@purdue.edu). *Ph.D. student*, Elmore Family School of Electrical and Computer Engineering, Purdue University.

[AC4] 2024 – Present. **Yiru Hou** (hou144@purdue.edu). *Ph.D. student*, School of Construction Management, Purdue University.

[AC5] 2023 – Present. **Harsh Pathak** (pathak19@purdue.edu). *Ph.D. student*, Department of Agricultural & Biological Engineering, Purdue University.

[AC6] 2023 – Present. **Md. Samiul Basir** (mbasir@purdue.edu). *Ph.D. student*, Department of Agricultural & Biological Engineering, Purdue University.

- Winner of the *2025 Outstanding Service Award*, College of Engineering, Purdue University.

Sponsorship of Students

[SP1] 2025 – Present. **Anuska Das** (das273@purdue.edu). Master's student, Elmore Family School of Electrical and Computer Engineering, Purdue University.

- *Research Assistant* for Indiana Department of Transportation (INDOT) with Professor James Krogmeier.

[SP2] 2025 – Present. **Nikhita Manjunath** (nmanjun@purdue.edu). Master's student, Elmore Family School of Electrical and Computer Engineering, Purdue University.
- *Research Assistant* for Center for Connected and Automated Transportation (CCAT) with Professor James Krogmeier.

[SP3] 2024 – Present. **Kwabena Bayity** (kbayity@nmsu.edu). Ph.D. student, Department of Agricultural Sciences Education & Communication, Purdue University.
- *Research Assistant* for Internet of Things for Precision Agriculture (IoT4Ag) Research Center with Professor Dave Cappelleri.
- *Teaching Assistant* for AGR 333: Data Science for Agriculture (Spring 2025) with Professor Bruce Erickson.

[SP4] 2024 – Present. **Anugunj Naman** (anaman@purdue.edu). Master's student, Department of Computer Science, Purdue University.
- *Research Assistant* for Indiana Department of Transportation (INDOT).

[SP5] 2024. **Heena Sahul Hameed** (hsahulha@purdue.edu). Master's student, Department of Agricultural & Biological Engineering, Purdue University.
- *Teaching Assistant* for ABE 205: Computations for Engineering Systems (Fall 2024).

[SP6] 2024. **Aathman Tharmasanthiran** (atharmas@purdue.edu). Master's student, Department of Computer Science, Purdue University.
- *Teaching Assistant* for AGR 333: Data Science for Agriculture (Spring 2024).
- *Teaching Assistant* for ABE 205: Computations for Engineering Systems (Fall 2024).

[SP7] 2024. **Noah Joel Haslett** (nhaslett@purdue.edu). Undergraduate student, Department of Agricultural & Biological Engineering, Purdue University.
- *Student Clerical – Peer Mentor* for ABE 205: Computations For Engineering Systems (Fall 2024).

[SP8] 2024. **Allison Marie Stover** (amstover@purdue.edu). Undergraduate student, Department of Agricultural & Biological Engineering, Purdue University.
- *Student Clerical – Peer Mentor* for ABE 205: Computations For Engineering Systems (Fall 2024).

Mentorship of Students

[ME1] 2025 – Present. **Luis Vargas Rojas** (lvargasr@purdue.edu). *Teaching Assistant for AGR 333: Data Science for Agriculture (Spring 2025)*. Ph.D. student, Department of Agronomy, Purdue University.

[ME2] 2025 – Present. **Ashwin Natraj** (ashwin97@purdue.edu). *Application for the Quad Fellowship*. Ph.D. student, Elmore Family School of Electrical and Computer Engineering, Purdue University.

[ME3] 2024 – Present. **Ahmed Mohamed** (mohame23@purdue.edu). *Applying Machine Learning in Channel Modeling*. Ph.D. student, Elmore Family School of Electrical and Computer Engineering, Purdue University.

[ME4] 2021 – Present. **Sneha Jha** (jha16@purdue.edu). Ph.D. student, Department of Agricultural & Biological Engineering, Purdue University.
- Provided guidance on the *Comprehensive Pavement Patching Tools and Web-based Software for Pavement Condition Assessment and Visualization* project.
- Advised on the design of on-farm trials.
- Winner of the *2025 Estus H. and Vashti L. Magoon Graduate Student Research Excellence Award*, College of Engineering, Purdue University.

[ME5] 2024. **Sean Harkin** (s.harkin5@universityofgalway.ie). *Visiting Scholar at Purdue Open Ag Technologies and Systems (OATS) Center*, Purdue University. Ph.D. student, Electronic and Computing Engineering, National University of Ireland, Galway.

[ME6] January – May 2024. **Sujata Bogati** (sbogati@purdue.edu). *Teaching Assistant for AGR 333: Data Science for Agriculture (Spring 2024)*. Ph.D. student, Department of Agronomy, Purdue University.

[ME7] 2023 – 2024. **Bharath Keshavamurthy** (bkeshav1@asu.edu). *Propagation Measurements and Analyses at 28 GHz via an Autonomous Beam-Steering Platform*. Ph.D. student, School of Electrical, Computer and Energy Engineering, Arizona State University.

[ME8] 2022 – 2023. **Md. Samiul Basir** (mbasir@purdue.edu). *Meta Ag: An Automatic Contextual Agricultural Metadata Collection App*. Master's student, Department of Agricultural & Biological Engineering, Purdue University.

[ME9] May – August 2021. **Christopher Alejandro Rodriguez**. *Internet of Things for Precision Agriculture (IoT4Ag) Research Center Research Experiences for Undergraduates (REU) Program*. Undergraduate student, University of California, Irvine.

[ME10] May – August 2021. **Zachary Neel**. *Internet of Things for Precision Agriculture (IoT4Ag) Research Center Research Experiences for Undergraduates (REU) Program*. Undergraduate student, Purdue University.

[ME11] 2020 – 2021. **Yang Wang** (wang701@purdue.edu). Ph.D. student, Elmore Family School of Electrical and Computer Engineering, Purdue University.

- Provided guidance on Ph.D. thesis: "*Design and Implementations of Open-Source Ag IoT Devices for Farm Machinery Data Acquisition and Integrated Analytics*."
- Co-authored award-winning journal paper: "*A Methodology for Combine Performance Analyses in Wheat Harvests with GNSS Data*."

Recommendation Letters

Kwabena Bayity (kbayity@nmsu.edu)	March 2025	*Foundation for Food & Agriculture Research (FFAR) Fellows Program*, Foundation for Food & Agriculture Research	-
	February 2025	*Harlan and Dorothy Parr Memorial Scholarship*, Community Foundation of Greater Lafayette	-
	October 2024	*PhD Program Application*, Department of Agricultural Sciences Education & Communication, Purdue University	Accepted
Sneha Jha (jha16@purdue.edu)	March 2025	*Agricultural & Biological Engineering (ABE) Outstanding PhD Student Award*, Purdue University	-
Ashwin Natraj Arun (ashwin97@purdue.edu)	March 2025	*Quad Fellowship*, Institute of International Education (IIE)	-
Sujata Bogati (sbogati@purdue.edu)	January 2025	*2024-2025 Department of Agronomy Graduate Student Teaching Awards*, Purdue University	-
Anugunj Naman (anaman@purdue.edu)	January 2025	*PhD Program Application*, Elmore Family School of Electrical and Computer Engineering, Purdue University	Accepted
Robert Rodriguez (rodr1037@purdue.edu)	January 2025	*Society of Manufacturing Engineers (SME) Education Foundation Scholarship*, Society of Manufacturing Engineers Education Foundation (SMEEF)	-
Heena Sahul Hameed (hsahulha@purdue.edu)	January 2025	*PhD Program Application*, Graduate School of Arts and Science, Yale University	-
	December 2024	*PhD Program Application*, Graduate School of Arts and Science, New York University	-
	December 2024	*PhD Program Application*, School for Environment and Sustainability, University of Michigan	-

	November 2024	*PhD Program Application*, Department of Agricultural & Biological Engineering and Department of Environmental and Ecological Engineering, Purdue University	-
Urvashi Pal (122128@student.nitandhra.ac.in)	October 2024	*Khorana Program for Scholars*, Indo-U.S. Science and Technology Forum	-

Peer Reviews

IEEE Open Journal of the Communications Society	2025
IEEE Military Communications Conference (MILCOM)	2024, 2022, 2021, 2019, 2018, 2016
IEEE Asilomar Conference on Signals, Systems, and Computers	2024, 2023, 2022
IEEE Transactions on Mobile Computing	2024
IEEE/ACM Transactions on Networking	2024
IEEE International Conference on Communications (ICC) Workshop on *Catalyzing Spectrum Sharing via Active-Passive Coexistence (CSSAPC)*	2024
IEEE Transactions on Communications	2023
IEEE Transactions on Wireless Communications	2023
IEEE Vehicular Technology Magazine	2023
IEEE Communications Magazine	2022
Pre-submission peer review of a manuscript for **American Society of Agricultural and Biological Engineers (ASABE) Journal** on *Safety and Health*	2022
IEEE International Conference on Intelligent Transportation Systems (ITSC)	2021
European Association for Signal Processing (EURASIP) Journal on *Wireless Communications and Networking*	2020
IEEE Global Communications Conference (GLOBECOM)	2020
International Telecommunication Union (ITU) Journal: *Information and Communication Technology (ICT) Discoveries* special issue on *Radio wave propagation*	2019
IEEE Journal on Selected Areas in Communications (JSAC) special issue on *Multiple Antenna Technologies for Beyond 5G*	2019
IEEE Access	2017

Services to the Community

[SC1] March 2025 – Present. **Faculty Advisor**. *2025 Summer Undergraduate Research Fellowship (SURF) Program*. Engineering Undergraduate Research Office (EURO), Purdue University, West Lafayette, Indiana, USA.

[SC2] January 2025 – Present. **Workforce Development Co-Lead**. *National Science Foundation* (*NSF) Engineering Research Center for the Internet of Things for Precision Agriculture (IoT4Ag)*. Purdue University, West Lafayette, Indiana, USA.

- Activities: coordinate workshops, informational booths, and extension activities to promote workforce engagement in digital agriculture and related fields.

[SC3] January 2025 – Present. **Affiliated Faculty**. *Institute for Digital and Advanced Agricultural Systems (IDAAS)*. Purdue University, West Lafayette, Indiana, USA.

[SC4] January 2025 – Present. **Band Leader, Lead Vocalist, and Lead Guitarist**. *Here We Are* (Purdue Student Band). Purdue University, West Lafayette, Indiana, USA.

- Impacts: an audience of approximately 200 attendees in 1 live performance.

[SC5] October 2023 – Present. **Faculty Advisor**. *Community Building*. Purdue Open Ag Technologies and Systems

(OATS) Center, Purdue University, West Lafayette, Indiana, USA.

- Activities: plan, coordinate, and facilitate group events, including weekly lunches, birthday celebrations, ice cream/snack/coffee hangouts, movie nights, spinning axe gatherings, and trap and skeet outings, ensuring seamless organization and an enjoyable experience for all participants.
- Impacts: Fostered a strong sense of belonging among student researchers, significantly enhancing community engagement.

[SC6] October 2023 – Present. **Purdue Online Faculty Liaison for College of Agriculture**. *Purdue University Online*. Purdue University, West Lafayette, Indiana, USA.

- Activities: advocate for online teaching practices, support faculty in online course development, and promote Purdue University Online faculty support programs; facilitate communication between faculty and administration to address and resolve incentive-related concerns.
- Impacts: successfully resolved incentive issues for 2 faculty members and connected over 10 faculty members with the Purdue University Online course production team, enhancing online course development and faculty engagement.

[SC7] March 2025. **Organizer and Faculty Advisor**. *Polaris Showcase, 2025 Purdue Road School*. The Clapping Circle, Academy Park, Purdue University, West Lafayette, Indiana, USA.

- Activities: led a team of 5 graduate students to prepare and present a live demo; organized and managed an exhibition area for the Purdue Open Ag Technologies and Systems (OATS) Center and the National Science Foundation (NSF) Engineering Research Center for the Internet of Things for Precision Agriculture (IoT4Ag); showcased the IoT4Ag Polaris Ranger vehicle customized by DataSpeed for autonomous driving and operations; engaged with visitors by distributing flyers, showcasing the vehicle, and demonstrating the onboard LiDAR sensor.
- Impacts: represented both OATS and IoT4Ag at the conference, which attracted over 3,300 registrants; promoted our missions by displaying banners, distributing flyers, and showcasing the vehicle to over 50 passersby; our team engaged in more in-depth conversations with approximately 10 visitors, discussing our research on autonomous agricultural operations and addressing their specific interests.

[SC8] March 7, 2025. **Organizer, Faculty Advisor, and Presenter**. *Exhibition Tables for Purdue Open Ag Technologies and Systems (OATS) Center, National Science Foundation (NSF) Engineering Research Center for the Internet of Things for Precision Agriculture (IoT4Ag), and Purdue Institute for Digital and Advanced Agricultural Systems (IDAAS)*. 2025 Joint Poster Session & Networking Gathering – Colleges of Ag & Engineering. Marriott Hall, Purdue University, West Lafayette, Indiana, USA.

- Activities: led a team of 4 student volunteers to manage 3 exhibition tables representing the OAST, IoT4Ag, and IDAAS research centers, showcasing 5 posters and 2 live demos; organized the OATS and IoT4Ag tables and presented 2 posters along with 1 live demo.
- Impacts: the networking event attracted approximately 320 attendees; our tables hosted around 50 visitors and introduced key challenges in agriculture data automation, in-field robotics, 4-H STEM education, and bridging the digital divide.

[SC9] February 2025. **Organizer and Faculty Advisor**. *Robo Racers: Smart Cutebot Track Challenge*. S.T.E.P. N2 STEM: Striving Towards Educational Progress in Social/Science, Technology, Engineering and Math. Purdue University, West Lafayette, Indiana, USA.

- Activities: coordinated with S.T.E.P. N2 STEM organizers to arrange event space, secure donations of swag, and manage logistics; led student volunteers in hosting the information table and facilitating robotics and programming challenges.
- Impacts: a total of 219 attendees registered for S.T.E.P. N2 STEM, including 122 children and 97 adults. Our table hosted approximately 85 visitors, ranging from kindergarteners to undergraduates, along with their family members.

[SC10] January 2025. **Evaluator**. *Outstanding Agricultural Engineering (AE) Student Awards*. Agricultural and Biological Engineering (ABE) Outstanding Student Evaluations. Department of Agricultural and Biological Engineering, Purdue University.

- Activities: evaluated and ranked sophomore and junior nominees for the Outstanding AE Student Awards using a standardized rubric; assessed academic performance and extracurricular achievements through nomination materials to identify exceptional students.
- Impacts: helped identify and recognize outstanding students, ensuring the selection of deserving award recipients and promoting academic excellence within the department.

[SC11] January 26, 2025. **Performer and Faculty Volunteer**. *Spring Festival Gala*. Purdue University Chinese Students and Scholar's Association (PUCSSA). Loeb Playhouse, Purdue University, West Lafayette, Indiana, USA.

- Impacts: approximately 300 registrants; over 200 attendees; contributed to a cumulative 10 minutes of performance within the 3-hour event.

[SC12] December 20, 2024. **Organizer**. *Polaris Showcase at INDOT*. Indiana Department of Transportation (INDOT) Research and Development, West Lafayette, Indiana, USA.

- Activities: coordinated with INDOT to host a live demonstration at their Research & Development facility.
- Impacts: attracted over 10 attendees from academia and government, including faculty members, students, and INDOT researchers and managers.

[SC13] November 2024 – February 2025. **Conference Co-Organizer and Invited Speaker**. *Open Ag Technology and Systems Center Conference 2025 (OATSCON25)*. Beck Agricultural Center, Agronomy Center for Research and Education (ACRE), Purdue University, West Lafayette, Indiana, USA.

- Activities: assisted in coordinating the conference schedule, inviting speakers, and testing & improving the registration page.
- Impacts: attracted approximately 100 attendees from academia, government, and industry.

[SC14] October 23, 2024. **Faculty Advisor**. *IoT4Ag Intra-ERC Exchange (ITEX) Networking Dinner*. Purdue University, West Lafayette, Indiana, USA.

- Activities: coordinated and hosted an ITEX student from the University of Florida.
- Impacts: facilitated networking among the ITEX student and 7 IoT4Ag members from Purdue University, including 5 students and 2 faculty members.

[SC15] September – October 2024. **Sponsored Mentor**. *IoT4Ag 2024 Pathway to Ph.D. (PPP) Program*. Internet of Things for Precision Agriculture (IoT4Ag) Engineering Research Center, University of Pennsylvania.

[SC16] August – September 2024. **Workshop Coordinator and Invited Speaker**. *Beginnings: Experiential Learning on Digital Agriculture and Plant Phenotyping Technologies (DAPPT) Workshop*. Purdue University, West Lafayette, Indiana, USA.

- Activities: assisted in inviting speakers and coordinating the workshop schedule.
- Impacts: facilitated training for approximately 10 industry professionals.

[SC17] June 13, 2024. **Faculty Advisor**. *Digital Agriculture 4-H Academy*, Purdue Extension, with Dr. Danielle Lay from 4-H Youth Development. Purdue University, West Lafayette, Indiana, USA.

- Activities: Coordinated the Smart Cutebot workshop on programming and robotics for 4-H students with two graduate students.
- Impacts: Engaged around 10 high school students in hands-on learning experiences.

[SC18] June 4, 2024. **Faculty Advisor**. *Open Ag Technology and Systems (OATS) Center Alumni Visit & Pizza Dinner*. Purdue University, West Lafayette, Indiana, USA.

- Activities: Coordinated a networking event connecting 5 students and 2 faculty members with a Purdue alumnus working in the industry.

[SC19] May – August 2024. **Faculty Mentor**. *Engineering Academic Career Club (EACC) Mentoring Circles*. Purdue University, West Lafayette, Indiana, USA.

- Activities: o-hosted bi-monthly mentoring meetings to guide Ph.D. students on academic career pathways, faculty application processes, and the development of strong application materials, including CVs, research statements, and teaching philosophies.
- Impacts: co-mentored 6 Ph.D. students from Materials Engineering, Biomedical Engineering, Industrial Engineering, and Mechanical Engineering, providing structured support for their academic and professional growth.

[SC20] May – August 2024. **Technical Program Committee (TPC) Member**. *Military Communications Conference (MILCOM) 2024 Track 1 – Waveforms and Signal Processing and Track 2 – Networking Protocols and Performance*. Institute of Electrical and Electronics Engineers (IEEE).

[SC21] April 26, 2024. **Participant**. *Streamlining Digital Ag Curriculum – Curriculum Mapping Small Group*. Department of Agricultural & Biological Engineering, Purdue University, West Lafayette, Indiana, USA.

- Activities: Engaged in curriculum mapping discussions to enhance and streamline digital agriculture coursework.
- Impacts: Contributed to identifying gaps and opportunities in the curriculum to improve student learning experiences and workforce preparedness.

[SC22] April 2, 2024. **Faculty Co-Host and Coordinator**. *Ag Week Tech Tuesday, Digital Ag Table for OATS/IoT4Ag*. Purdue University, West Lafayette, Indiana, USA.

- Activities: engaged with visitors to introduce digital agriculture technologies, including programming, robotics, and data science; presented research posters and facilitated discussions on advancements in the field.
- Impacts: reached approximately 60 visitors, fostering awareness and interest in digital agriculture innovations.

[SC23] March 29, 2024. **Faculty Advisor**. *IoT4Ag-Purdue Event Storming & Pizza Lunch*. Purdue University, West Lafayette, Indiana, USA.

- Activities: assisted in organizing and actively participated in a collaborative brainstorming session using sticky notes and long whiteboard paper, engaging 4 faculty members and approximately 10 students.

[SC24] March 22, 2024. **Faculty Advisor**. *Purdue Internet of Things for Precision Agriculture (IoT4Ag) Plan and Eat*. Purdue University, West Lafayette, Indiana, USA.

- Impacts: helped facilitate a research-focused lunch discussion, engaging 4 faculty members and 8 students in collaborative planning.

[SC25] March 20 – 24, 2024. **Faculty Advisor and Purdue Delegation Lead**. *Minorities in Agriculture, Natural Resources, and Related Sciences (MANRRS) Conference*. Internet of Things for Precision Agriculture (IoT4Ag). Chicago, Illinois, USA.

- Activities: 1 IoT4Ag booth at the MANRRS Career Expo; 2 workshops at the MANRRS High School Symposium.
- Impacts: approximately 80 visitors at the booth; approximately 100 attendees in workshops (~50 attendees per session across two workshops).

[SC26] March 18, 2024. **Lead Co-Organizer and Faculty Volunteer**. *Open Ag Technology and Systems (OATS) Center Departure Party for Visiting Scholar*. Purdue University, West Lafayette, Indiana, USA.

- Activities: assisted in organizing a farewell event for a visiting scholar from the National University of Ireland, Galway, with over 10 participants.

[SC27] March 3, 2024. **Faculty Volunteer**. *ECE Informational Open House for Prospective Graduate Students*. Elmore Family School of Electrical and Computer Engineering, Purdue University, West Lafayette, Indiana, USA.

- Impacts: Engaged with 35 prospective students and 25 current students to provide insights into the graduate program and the ECE community.

[SC28] March 1, 2024. **Faculty Advisor**. *Open Ag Technology and Systems (OATS) Center Lunch & Discussion with Orchard Farmers*. Purdue University, West Lafayette, Indiana, USA.

- Activities: facilitated a lunch discussion, bringing together 2 farmers, 1 faculty member, and 6 graduate students (including one international visiting scholar) to exchange knowledge and insights.

[SC29] February – May 2024. **Technical Program Committee (TPC) Member**. *International Conference on Communications (ICC) Workshop on Catalyzing Spectrum Sharing via Active-Passive Coexistence (CSSAPC)*. Institute of Electrical and Electronics Engineers (IEEE).

[SC30] February – April 2024. **Syllabus Development Team Member**. *Online Master of Science in Data Science (OMSDS) Program*. Purdue University Online, West Lafayette, Indiana, USA.

[SC31] February – April 2024. **Co-Author**. *Clinical Faculty Proposal: Program Development and Evaluation*. Department of Agricultural Sciences Education & Communication, Purdue University, West Lafayette, Indiana, USA.

[SC32] February 16, 2024. **Faculty Advisor**. *Purdue Open Ag Technologies and Systems (OATS) Group Lunch*. West Lafayette, Indiana, USA.

- Impacts: 8 graduate students; 1 faculty member.

[SC33] February 11, 2024. **Host**. *Lunar New Year Dumpling Making*. West Lafayette, Indiana, USA.

- Impacts: 5 international students; 1 faculty member.

[SC34] February 10, 2024. **Performer and Faculty Volunteer**. *Lunar New Year Gala*. Purdue University Chinese Students and Scholar's Association (PUCSSA). Loeb Playhouse, Purdue University, West Lafayette, Indiana, USA.

- Impacts: over 400 registrants; approximately 300 attendees; contributed to a cumulative 15 minutes of performance within the 3-hour event.

[SC35] February 9, 2024. **Faculty Volunteer**. *Purdue ABE Graduate Student Recruitment Weekend*. Agricultural and Biological Engineering (ABE) Department. Purdue University, West Lafayette, Indiana, USA.

[SC36] February 3, 2024. **Faculty Volunteer Driver and Server**. *2024 Purdue Ag Alumni Fish Fry*. Tippecanoe County Fairgrounds, Lafayette, Indiana, USA.

- Impacts: over 1000 attendees; provided transportation for 2 student volunteers; delivered food to multiple tables.

[SC37] January – February 2024. **Faculty Volunteer Interviewer**. *Clinical Assistant Professor in Online Teaching Search*. Department of Food Science, Purdue University, West Lafayette, Indiana, USA.

- Impacts: assisted in interviewing 3 candidates and contributed to the selection process.

[SC38] January – February 2024. **Faculty Advisor**. *Appreciation Letter/Gift Card Writing*. Engineering Meet & Eat Letter Writing Service Project and Purdue Open Ag Technologies and Systems (OATS) Center. Purdue University, West Lafayette, Indiana, USA.

- Impacts: approximately 10 students; 3 faculty members; created and distributed a total of 2 letters and 2 gift cards.

[SC39] January 24, 2024. **Faculty Advisor**. *Purdue Open Ag Technologies and Systems (OATS) Group Irish Music Night*. West Lafayette, Indiana, USA.

- Impacts: 5 international students (including 1 visiting scholar); 1 faculty member.

[SC40] January 23, 2024. **Faculty Advisor**. *Purdue Open Ag Technologies and Systems (OATS) Group Music Party and Band Practice Room Tour*. West Lafayette, Indiana, USA.

- Activities: Organized a tour of the Purdue Band practice room for 3 graduate students; hosted a music party focusing on pressure management.
- Impacts: Enhanced community engagement among graduate students; provided a platform for stress relief and cultural exchange.

[SC41] January 8, 2024. **Faculty Advisor**. *Purdue Open Ag Technologies and Systems (OATS) Group Dinner*. West Lafayette, Indiana, USA.

- Impacts: 12 attendees, including 2 visiting scholars (1 undergraduate student and 1 graduate student) and 5 Purdue graduate students.

[SC42] December 13, 2023. **Faculty Advisor**. *Purdue Internet of Things for Precision Agriculture (IoT4Ag) Movie Night*. Purdue University, West Lafayette, Indiana, USA.

- Impacts: 10 graduate/postdoctoral researchers (including 1 visiting scholar) from 3 research groups.

[SC43] November 2023. **Guest Interviewee**. *AI and Agriculture*. Undergraduate Student Project, Course PHIL 208 – Ethics of Data Science. Purdue University, West Lafayette, Indiana, USA.

[SC44] November 10, 2023. **Faculty Advisor**. *Purdue Open Ag Technologies and Systems (OATS) Group Lunch*. West Lafayette, Indiana, USA.

- Impacts: approximately 10 attendees.

[SC45] October 31, 2023. **Faculty Advisor**. *Purdue Open Ag Technologies and Systems (OATS) Group Movie Night*. Purdue University, West Lafayette, Indiana, USA.

- Impacts: 4 graduate students (including 1 visiting scholar); 1 faculty member.

[SC46] October 25, 2023. **Co-organizer**. *IoT4Ag Orientation by the Student & Postdoctoral Fellow Leadership Council (SPLC)*. 2023 Internet of Things for Precision Agriculture (IoT4Ag) National Science Foundation (NSF) Site Visit, University of Pennsylvania, Philadelphia, Pennsylvania, USA.

[SC47] October 17, 2023. **Faculty Volunteer** (Research Poster Presenter and Lab Tour Guide). *ABE Ambassador and AGR Digital Ag Learning Community Tour*. Purdue University, West Lafayette, Indiana, USA.

- Impacts: approximately 20 students.

[SC48] October 2023 – May 2024. **Lead Vocalist**. *Midnight Donut* (Purdue Student Band). Purdue University, West Lafayette, Indiana, USA.

- Impacts: a cumulative audience of approximately 300 across two live performances.

[SC49] September 2023 – February 2024. **Recruitment Coordinator**. *Automated Maintenance Vehicle Tracking and Record Keeping via Telematics*. Indiana Department of Transportation (INDOT) Joint Transportation Research Program (JTRP), Purdue University, West Lafayette, Indiana, USA.

- Impacts: 40 candidates from 7 departments.

[SC50] September 19, 2023. **Co-Leader** of the Organizing Committee. *Internet of Things for Precision Agriculture (IoT4Ag) Digital Ag Fest*. Loeb Stadium, Lafayette, Indiana, USA.

- Activities: research poster presentations; technical live demos; recreational events.
- Impacts: 370 registrants; 150 – 200 participants.

[SC51] September 17, 2023. **Instructor**. *Purdue Digital Ag Workshop*. Purdue Digital Agriculture and Purdue Extension 4-H Youth Development. ADM Agricultural Innovation Center, Purdue University, West Lafayette, Indiana, USA.

- Impacts: 15 high school students; 2 teachers.

[SC52] September 7 – 8, 2023. **Instructor** and **Invited Panelist**. *Internet of Things for Precision Agriculture (IoT4Ag) Minorities in Agricultural, Natural Resources, And Related Sciences (MANRRS) Junior Extension*. Junior MANRRS Institutes, Indianapolis, Indiana, USA.

- Activities: 5 workshops; 1 panel discussion.
- Impacts: 2 middle schools primarily serving students of color; approximately 140 students.

[SC53] June – July 2023. **Peer Mentor**. *Mandela Washington Fellowship*. Young African Leaders Initiative, United States Department of State. Purdue University, West Lafayette, Indiana, USA.

- Impacts: 25 fellows.

[SC54] June 22, 2023. **Organizer**. *IoT4Ag/OATS/ABE Disc Golf Hangout*. Internet of Things for Precision Agriculture (IoT4Ag) Research Center, Open Ag Technologies and Systems (OATS) Center, and Agricultural and Biological Engineering (ABE) Department. Purdue University, West Lafayette, Indiana, USA.

- Impacts: 27 participants including 2 faculty members.

[SC55] June 14 – 16, 2023. **Purdue Student Liaison**. *Internet of Things for Precision Agriculture (IoT4Ag) 2023 Annual Retreat*. University of Florida in Gainesville, Florida.

- Impacts: led and guided approximately 10 Purdue students from various countries.

[SC56] June 13 – 14, 2023. **Session Co-Organizer**. *Broader Impacts Workshop*. Internet of Things for Precision Agriculture (IoT4Ag) 2023 Annual Retreat Student Bootcamp, University of Florida in Gainesville, Florida.

[SC57] June 1, 2023. **Co-organizer**. *IoT4Ag/OATS/REEU Disc Golf Hangout*. Internet of Things for Precision Agriculture (IoT4Ag) Research Center, Open Ag Technologies and Systems (OATS) Center, and Research and Extension Experiential Learning for Undergraduates (REEU). Purdue University, West Lafayette, Indiana, USA.

- Impacts: 14 students and 1 faculty member.

[SC58] May – August 2023. **Technical Program Committee (TPC) Member**. *Military Communications Conference (MILCOM) 2023 Track 1 – Waveforms and Signal Processing*. Institute of Electrical and Electronics Engineers (IEEE).

[SC59] April – May 2023. **Proctor**. *Disability Resource Center (DRC)*. Purdue University, West Lafayette, Indiana, USA.

[SC60] April 6, 2023. **Organizer**. *Purdue IoT4Ag Coffee & Snack Hour*. Internet of Things for Precision Agriculture (IoT4Ag) Research Center, and Open Ag Technologies and Systems (OATS) Center. Purdue University, West Lafayette, Indiana, USA.

- Impacts: 20 participants.

[SC61] March 2023. **Committee Member**. *Outstanding Faculty Mentor Award 2023 Selection Committee*. Elmore Family School of Electrical and Computer Engineering, Purdue University, West Lafayette, Indiana, USA.

[SC62] January 29, 2023. **Performer and Faculty Volunteer**. *Lunar New Year Gala*. Purdue University Chinese Students and Scholar's Association (PUCSSA). Loeb Playhouse, Purdue University, West Lafayette, Indiana, USA.

- Impacts: approximately 300 attendees; contributed to a cumulative 5 minutes of performance within the 3-hour

event.

[SC63] December 2022 – December 2023. **Postdoctoral Scholar Counselor**. *Student Leadership Council (SLC)*. Internet of Things for Precision Agriculture (IoT4Ag) Engineering Research Center, Purdue University, West Lafayette, Indiana, USA.

- Impacts: significantly increased IoT4Ag student participation on the Purdue campus through regular community-building events; facilitated the name change of SLC to Student and Postdoc Fellow Leadership Council (SPLC); and raised the number of Purdue representatives in SLC/SPLC from 1 to 3 (out of 7 positions).

[SC64] September – October 2022. **Sponsored Mentor**. *IoT4Ag 2022 Pathway to Ph.D. (PPP) Program*. Internet of Things for Precision Agriculture (IoT4Ag) Engineering Research Center, University of Pennsylvania.

[SC65] July 28 – 29, 2022. **Presentation Judge**. *2022 Summer Undergraduate Research Fellowship (SURF) Symposium*. Engineering Undergraduate Research Office (EURO), Purdue University, West Lafayette, Indiana, USA.

[SC66] June 14 – 17, 2022. **Volunteer** and **Poster Competition Judge**. *Internet of Things for Precision Agriculture (IoT4Ag) Summer 2022 Annual Meeting*. Purdue University, West Lafayette, Indiana, USA.

[SC67] May – August 2022. **Technical Program Committee (TPC) Member**. *Military Communications Conference (MILCOM) 2022 Track 1 – Waveforms and Signal Processing*. Institute of Electrical and Electronics Engineers (IEEE).

[SC68] April – August 2022. **Volunteer**. *Purdue OATS DataStation (POD) Team – Sensor Deployment and Data Analysis*. Purdue University, West Lafayette, Indiana, USA.

[SC69] February 2022. **Proctor**. *ECE 440 Transmission of Information*. Purdue University, West Lafayette, Indiana, USA.

[SC70] November 5, 2021. **Volunteer**. *2021 Open Ag Technology and Systems Center Advance Conference* (OATSADVANCE21), Purdue University, West Lafayette, Indiana, USA.

[SC71] October – December 2021. **Mentor**. *United States Naval Academy (USNA) Longmont Measurement Campaign and Student Seminar*. Wireless Measurements Group at the USNA.

[SC72] September – October 2021. **Mentor**. *IoT4Ag 2021 Pathway to Ph.D. (PPP) Program*. Internet of Things for Precision Agriculture (IoT4Ag) Engineering Research Center, University of Pennsylvania.

[SC73] July – September 2021. **Technical Program Committee (TPC) Member**. *Military Communications Conference (MILCOM) 2021 Track 1 – Waveforms and Signal Processing*. Institute of Electrical and Electronics Engineers (IEEE).

[SC74] July 29 – 31, 2021. **Presentation Judge**. *2021 Summer Undergraduate Research Fellowship (SURF) e-Symposium*. Engineering Undergraduate Research Office (EURO), Purdue University, West Lafayette, Indiana, USA.

[SC75] May – July 2021. **Mentor**. *2021 Summer Undergraduate Research Fellowship (SURF) Program*. Engineering Undergraduate Research Office (EURO), Purdue University, West Lafayette, Indiana, USA.

[SC76] May – July 2021. **Mentor**. *2021 Research for Undergraduate Experience (REU) Program*. Internet of Things for Precision Agriculture (IoT4Ag) Engineering Research Center, University of Pennsylvania.

[SC77] May – July 2019. **Technical Program Committee (TPC) Member**. *Military Communications Conference (MILCOM) 2019 Track 1 – Waveforms and Signal Processing*. Institute of Electrical and Electronics Engineers (IEEE).

[SC78] May – July 2018. **Technical Program Committee (TPC) Member**. *Military Communications Conference (MILCOM) 2018 Track 1 – Waveforms and Signal Processing*. Institute of Electrical and Electronics Engineers (IEEE).

[SC79] September 2014. **Volunteer**. *Big Ten+ Graduate School Exposition*. Purdue University, West Lafayette, Indiana, USA.

[SC80] August – December 2014. **Note Taker**. *Disability Resource Center (DRC)*. Purdue University, West Lafayette, Indiana, USA.

[SC81] August – December 2014. **Mentor**. *eMentoring Program*. Purdue University Graduate School, West Lafayette, Indiana, USA.

[SC82] August 2014. **Volunteer**. *International Student Orientation*. School of Electrical and Computer Engineering, Purdue University, West Lafayette, Indiana, USA.

[SC83] April 2014. **Tech Support Volunteer for Seniors**. *University Place*. West Lafayette, Indiana, USA.

[SC84] July 2011. **Volunteer Teacher**. *Jiantang Village Elementary School*. Fenghuang County, Hunan Province, China.

[SC85] March 2010. **Community Library Volunteer**. *Young Volunteers Association*. Tianjin, China.
[SC86] September 2009 – July 2010. **Volunteer Student Counsellor**. *Tianjin University*. Tianjin, China.

Society Memberships

Member 2024 – Present
American Society of Agricultural and Biological Engineers (ASABE)
Member 2024 – Present
International Society of Precision Agriculture (ISPA)
Member 2022 – Present
Institute of Electrical and Electronics Engineers (IEEE)
Student Member 2021, 2015
IEEE Intelligent Transportation Systems Society (ITSS)
Student Member 2018 – 2021
IEEE Communications Society (ComSoc)
Member 2018
Applied Computational Electromagnetics Society (ACES)
Student Member 2017 – 2020
American Society of Agricultural and Biological Engineers (ASABE)
Student Member 2015 – 2021
Institute of Electrical and Electronics Engineers (IEEE)

Career Development

[CD1] January 2025 – Present. **Mentee**. *2025 GradConnect Engineering Alumni Mentoring Program*. Purdue Engineering Alumni Association.
[CD2] March 2024 – Present. **Sponsored Trainee**. *Summer 2024 Faculty Success Alumni Program (FSP Alumni)*. National Center for Faculty Development and Diversity (NCFDD).
[CD3] January – March 2025. **Sponsored Trainee**. *2025 College of Agriculture Professors Reviewing Excellent Practices (PREP) Cohort*. Purdue University, West Lafayette, Indiana, USA.
[CD4] December 11, 2024. **Sponsored Attendee and Poster Presenter**. *Advancing the Digital Technology Revolution for Agriculture*. Institute for Digital and Advanced Agricultural Systems (IDAAS). Purdue University, West Lafayette, Indiana, USA.
[CD5] November 14, 2024. **Sponsored Attendee**. *AI Summit*. Purdue University. Hyatt Regency Garage Valet, Indianapolis, Indiana, USA.
[CD6] November 7, 2024. **Sponsored Attendee**. *Purdue GIS Day 2024: Exploring GeoAI.* Purdue University, West Lafayette, Indiana, USA.
[CD7] January 2024 – May 2025. **Sponsored Mentee**. *Mentoring Triads*. Susan Bulkeley Butler Center for Leadership Excellence. Purdue University, West Lafayette, Indiana, USA.
[CD8] May 5 – 7, 2024. **Sponsored Attendee**. *Science-i Bridging Worlds Workshop*. Purdue University, West Lafayette, Indiana, USA.
[CD9] March 6, 2024. **Sponsored Attendee and Poster Presenter**. *Center for Digital Agriculture (CDA) Conference 2024: Future of Digital Agriculture*. University of Illinois Urbana-Champaign. iHotel and Illinois Conference Center, Champaign, Illinois, USA.
[CD10] January – May 2024. **Sponsored Trainee**. *Spring 2024 Cohort Program for Innovation and Leadership in Online Teaching (CoPILOT)*. Purdue University Online. Purdue University, West Lafayette, Indiana, USA.
[CD11] January – March 2024. **Sponsored Trainee**. *Spring 2024 Faculty Success Program (FSP)*. National Center for Faculty Development and Diversity (NCFDD).
[CD12] January 29, 2024. **Sponsored Attendee**. *AI Fusion Poster Session*. Purdue University, West Lafayette, Indiana, USA.

[CD13] January 16, 2024. **Sponsored Trainee**. *Purdue Graduate School Mentoring Course*. Purdue University, West Lafayette, Indiana, USA.

[CD14] January 4 – 5, 2024. **Sponsored Trainee**. *Leadership Skills for Engineering and Science Faculty Workshop*. Purdue University, West Lafayette, Indiana, USA.

[CD15] December 13 – 14, 2023. **Sponsored Attendee**. *2023 Purdue Extension Professional Development Conference*. Tippecanoe County 4-H Fairgrounds, Lafayette, Indiana, USA.

[CD16] December 4 – 7, 2023. **Sponsored Attendee**. *Fall 2023 National Science Foundation (NSF) Virtual Grants Conference*. Attended remotely.

[CD17] December 1, 2023. **Sponsored Attendee**. *Digital Innovation in Agri-Food Systems Laboratory (DIAL) Ventures Pitch Day*. Purdue University, West Lafayette, Indiana, USA.

[CD18] November 9, 2023. **Sponsored Attendee**. *Clinical & Professional Faculty Mentoring Discussion and Networking Event*. Susan Bulkeley Butler Center for Leadership Excellence and Purdue Office of Vice Provost. Purdue University, West Lafayette, Indiana, USA.

[CD19] October 2023 – May 2024. **Sponsored Mentee**. *Speed Coaching Network*. Susan Bulkeley Butler Center for Leadership Excellence. Purdue University, West Lafayette, Indiana, USA.

[CD20] October 24 – 26, 2023. **Sponsored Attendee**. *2023 Internet of Things for Precision Agriculture (IoT4Ag) National Science Foundation (NSF) Site Visit*. University of Pennsylvania, Philadelphia, Pennsylvania, USA.

[CD21] October 6, 2023. **Sponsored Attendee**. *Planting the Digital Seed: The Computer's Influence on Plant Science*. 7th Annual Purdue Plant Science Symposium. Creighton Hall, Purdue University, West Lafayette, Indiana, USA.

[CD22] September 21, 2023. **Sponsored Attendee**. *2023 Purdue System-Wide Virtual Forum: Reimagining Higher Education with Artificial Intelligence*. Attended remotely.

[CD23] August 31, 2023. **Sponsored Attendee**. *Farm Progress Show*. Decatur, Illinois.

[CD24] August 7 – 8, 2023. **Sponsored Attendee**. *National Science Foundation (NSF) Tricenter Superconvergence*. Nanosystems Engineering Research Center for Nanotechnology Enabled Water Treatment (NEWT), Rice University, Houston, Texas, USA.

[CD25] August 3, 2023. **Sponsored Attendee** and **Research Poster Presenter**. *Experience ACRE*. Agronomy Center for Research and Education (ACRE), Purdue University, West Lafayette, Indiana, USA.

[CD26] June 14 – 16, 2023. **Sponsored Attendee**. *Internet of Things for Precision Agriculture (IoT4Ag) 2023 Annual Retreat*. University of Florida in Gainesville, Florida.

[CD27] June 13 – 14, 2023. **Sponsored Attendee**. *Internet of Things for Precision Agriculture (IoT4Ag) 2023 Annual Retreat Student Bootcamp*. University of Florida in Gainesville, Florida.

[CD28] May 18, 2023. **Sponsored Attendee**. *U.S. Immigration and Employment Options for International Postdocs*. Purdue Postdoctoral Association (PPDA), Purdue University, West Lafayette, Indiana, USA. Attended remotely.

[CD29] May 8 – 12, 2023. **Sponsored Attendee**. *Grants Support Technical Assistance Workshop*. National Institute of Food and Agriculture (NIFA), United States Department of Agriculture (USDA). Attended remotely.

[CD30] April – July 2023. **Mentee**. *Internet of Things for Precision Agriculture (IoT4Ag) Mentorship Group – Academic Path* (led by Professor David Arnold). University of Florida, Gainesville, Florida, USA. Attended remotely.

[CD31] March 29, 2023. **Sponsored Attendee**. *Internet of Things for Precision Agriculture (IoT4Ag) Peer Mentoring Hour*. University of Pennsylvania, Philadelphia, Pennsylvania, USA. Attended remotely.

[CD32] February 9, 2023. **Sponsored Attendee**. *Effective and Inclusive Mentoring Workshop*. Center for Teaching and Learning, University of Pennsylvania, Philadelphia, Pennsylvania, USA. Attended remotely.

[CD33] June 14 – 17, 2022. **Sponsored Attendee**. *Internet of Things for Precision Agriculture (IoT4Ag) Summer 2022 Annual Meeting*. Purdue University, West Lafayette, Indiana, USA.

[CD34] April – August 2022. **Mentee**. *Engineering Academic Career Club (EACC) Mentoring Circles* (Future Faculty Development Program). Purdue University, West Lafayette, Indiana, USA.

[CD35] January – May 2022. **Trainee**. *Effective Management* (Professional Development Program). Purdue University, West Lafayette, Indiana, USA.

[CD36] November 9 – 10, 2021. **Sponsored Attendee**. *Aerial Experimentation and Research Platform on Advanced Wireless (AERPAW) Fall 2021 Event*. North Carolina State University, Raleigh, North Carolina, USA. [Event Information]

- Attended hands-on trainings on how to access the aerial wireless experimentation platform AERPAW and run experiments.
- Attended the Sixth Generation Wireless Research at North Carolina State University (6GNC) Meeting.

[CD37] November 1 – 3, 2021. **Sponsored Attendee**. *Young Gladiators Colosseum Master Class*. Institute for the Wireless Internet of Things, Northeastern University, Boston, Massachusetts, USA. [Program Information]

- Attended hands-on trainings on how to access the wireless emulator Colosseum and run experiments.
- Visited the Institute for the Wireless Internet of Things and the Colosseum Facility at Northeastern University.

[CD38] September 23 – 26, 2021. **Trainee**. *Training for Mentors – IoT4Ag 2021 Pathway to Ph.D. (PPP): The Pilot.* University of Pennsylvania, Philadelphia, Pennsylvania, USA. Attended remotely.

- Learnt the roles and responsibilities of PPP mentors.

[CD39] March 27, 2021. **Trainee**. *Mentoring Moments Workshop for Summer Undergraduate Research Fellowship (SURF) Mentors*. Purdue University, West Lafayette, Indiana, USA.

- Learnt various techniques to better build relationships with mentees.

[CD40] March 24 – 26, 2021. **Team Leader**. *OATSCON21 Pork Hackathon Part 1: Advance Shipping Notice (ASN)*. Purdue University, West Lafayette, Indiana, USA.

- Pork ASN Web/Slack Chatbot: led a student team to develop and implement two intelligent chatbots for human operators/managers to easily take advantage of an ASN system. [Presentation]

[CD41] November 16 – 19, 2020. **Sponsored Speaker**. *2020 AgGateway Annual Meeting and Conference*. Virtual conference. [Gateway to Ag Careers Cohort Member Certificate]

[CD42] October – December 2020. **Team Leader**. Team OATS, *Producer-Led Innovation Challenge* hosted by AgriNovus, Indiana, USA.

- OATS Data Automation Platform: led international students and developers from five different countries in developing an open-source project for agricultural data automation. [Executive summary] [Presentation]

Open-Source Programming Projects

[PP1] **[Matlab] Automating Work Orders using GPS Tracks**: Matlab scripts to fully automate work order verification and partially automate work order generation for Indiana Department of Transportation (INDOT) winter operations using GPS tracks.
Zhang, Y. (2022). **Automating Work Orders using GPS Tracks**. *GitHub repository*. Retrieved from https://github.com/YaguangZhang/IndotActivityMatlabWorkspace

[PP2] **[C, C++, Matlab] NTIA Extended Hata (eHata) Urban Propagation Model for Matlab**: C shared library (loadable by Matlab) of the NTIA eHata model C++ implementation.
Zhang, Y. (2022). **NTIA Extended Hata (eHata) Urban Propagation Model for Matlab**. *GitHub repository*. Retrieved from https://github.com/YaguangZhang/ntiaEHataForMatlab

[PP3] **[Matlab] Utah Measurement Campaign Code**: code used in post-processing for a millimeter-wave measurement campaign on the campus of University of Utah, Salt Lake City, Utah, USA, to test a costume-built mobile millimeter-wave measurement system.
Zhang, Y. (2021). **Utah Measurement Campaign Code**. *GitHub repository*. Retrieved from https://github.com/YaguangZhang/UtahMeasurementCampaignCode

[PP4] **[Matlab] Sun Shadow Simulator**: an open-source Matlab codebase to locate sun shadow (e.g., for a given location at a given time) based on LiDAR data.
Zhang, Y. (2021). **Sun Shadow Simulator (Matlab Workspace)**. *GitHub repository*. Retrieved from https://github.com/YaguangZhang/SunShadowSimulatorMatlabWorkspace

[PP5] **[Jekyll, Markdown] YaguangZhang.GitHub.io**: source code for my personal website hosted at https://smallpi.club/, https://smallpi.zyglabs.com/, and https://yaguangzhang.github.io/.
Zhang, Y. (2020). **YaguangZhang.GitHub.io**. *GitHub repository*. Retrieved from https://github.com/YaguangZhang/yaguangzhang.github.io

[PP6] **[Python] YAM3S: Yet Another Mobile Millimeter-wave Measurement System**: an open-source sliding correlator channel sounder system for millimeter-wave channel measurements, featuring fully automatic antenna

alignment.
Zhang, Y. (2020). **YAM3S: Yet Another Mobile Millimeter-wave Measurement System**. *GitHub repository*. Retrieved from https://github.com/YaguangZhang/YAM3S

[PP7] **[Matlab, Python, C++] Cellular Coverage Mapper for Drone Data Relay**: an open-source Matlab codebase for large-scale quantitative coverage analysis of cellular networks with drone data relay.
Zhang, Y. (2020). **Cell Coverage Mapper for Drones (Matlab Workspace)**. *GitHub repository*. Retrieved from https://github.com/YaguangZhang/CellCoverageMapperForDronesMatlabWorkspace

[PP8] **[Python] Simple Exercise Statistics**: a simple open-source data visualization codebase for workout records via Python 3 and Matplotlib.
Zhang, Y. (2020). **Simple Exercise Statistics**. *GitHub repository*. Retrieved from https://github.com/YaguangZhang/SimpleExerciseStatistics

[PP9] **[Matlab, Python] NIST Measurement Campaign Code**: code used in data collection and post-processing for a millimeter-wave measurement campaign in a coniferous forest near National Institute of Standards and Technology (NIST), Boulder, Colorado, USA, to investigate millimeter-wave propagation through foliage.
Zhang, Y. (2020). **NIST Measurement Campaign Code**. *GitHub repository*. Retrieved from https://github.com/YaguangZhang/NistMeasurementCampaignCode

[PP10] **[Matlab] EARS Measurement Campaign Code**: code used in data collection and post-processing for a millimeter-wave measurement campaign on the campus of United States Naval Academy, Annapolis, Maryland, USA, to investigate millimeter-wave propagation in suburban environments.
Zhang, Y. (2019). **EARS Measurement Campaign Code**. *GitHub repository*. Retrieved from https://github.com/YaguangZhang/EarsMeasurementCampaignCode

[PP11] **[Matlab] Wheat Harvesting GPS Data Visualization and Analysis (Matlab Workspace)**: an open-source Matlab codebase for wheat harvesting GPS analysis, featuring fully automatic algorithms for high-precision field shape generation, vehicle activity recognition, and product tracking & tracing.
Zhang, Y. (2019). **GPS Data Visualization and Analysis Workspace**. *GitHub repository*. Retrieved from https://github.com/YaguangZhang/GpsDataVisualizationAndAnalysisWorkspace

[PP12] **[Android] Combine Kart Truck: A GPS Logger for Wheat Harvesting**: an open-source GPS/Cell/Wi-Fi logger with user registration function for wheat harvesting.
Zhang, Y., Balmos, A. (2019). **Combine Kart Truck**. *GitHub repository*. Retrieved from https://github.com/OATS-Group/CombineKartTruck

[PP13] **[WordPress, HTML, CSS] ZygLabs.com/Sing4U**: an art blog encouraging people to take advantage of their habits to voluntarily help others and make the world a better place.
Zhang, Y. (2017). **Sing4U**. [Online]. Available: https://www.zyglabs.com/sing4u/

[PP14] **[JavaScript, HTML, CSS] Purdue Room Information Viewer**: an interactive web application to show room information at Purdue University. [Demonstration video]
Zhang, Y. (2016). **Purdue Room Info Viewer**. *GitHub repository*. Retrieved from https://github.com/YaguangZhang/purdueroominfoviewer/tree/stage_3

[PP15] **[Android] Pavement Patching Tracker**: a GPS logger for tracking pavement patching based on Combine Kart Truck.
Zhang, Y. (2016). **Pavement Patching Tracker**. *GitHub repository*. Retrieved from https://github.com/YaguangZhang/PavementPatchingTracker

Bug Reports and Fixes

[BF1] 2015. Bug report on the interactive web map viewer **mapview** in Matlab 2014a and 2014b for Mac. *Markers may be added at wrong locations*. Confirmed by MathWorks. Fixed in 2015a and later version.

[BF2] 2017. Bug report on X-Raym's HTML5 Audio controller **wavesurfer-wp**. *Plugin may break with .wav files*. Confirmed by the author.

[BF3] 2019. Bug report and patch suggestions with regard to spfrommer's Matlab library **terrain-elevation** for working with USGS data. *Unhandled tile size edge case*. Confirmed and fixed by the author.

[BF4] 2022. Bug report and patch suggestions with regard to spfrommer's Matlab library **terrain-elevation** for working

with USGS data. *Inconsistent outputs from Windows and Linux*. Confirmed by the author.

[BF5] 2022. Bug report on the **2017–2019 3D Elevation Program (3DEP) Indiana Statewide LiDAR Database**. *Missing projection information in some DSM tiles*. Confirmed by the author. We provided updated tile files to replace the anomalous ones.

[BF6] 2022. Bug report on the Mapping Toolbox 5.3 utility **readgeoraster** in Matlab 2022a for Windows and Linux. *Output coordinates may be shifted from the correct locations*. Confirmed by MathWorks. Fixed in the R2023a release.

Selected Student Comments on Teaching

- 2024. **Instructor**. *ABE 205 Computations for Engineering Systems*.
  - I loved this class and learned enough take-aways that make me question and view the world around me in a different way.
  - Thank you for the passion & excitement you brought to teaching this course & thank you for making/preparing what you taught w/ intent & deeper meaning
  - The professor was extremely engaging with the students.
  - I love how motivative Dr. Zhang is and he is very passionate on our learning.
  - Very enthusiastic and caring professor. He cared more about us learning than how much we succeeded.
  - Dr. Zhang, you have been a great teacher and you have great ideas and values for the course. Keep those great values when you make your decisions, and you will do very well. Thank you!
- 2024. **Instructor**. *AGR 333 Data Science for Agriculture*.
  - I wanted to thank you for the time and effort spent preparing this lecture for us. I have ADHD, and so oftentimes it is very hard for me to stay focused in class, but your teaching style made this way easier for me.
  - The creativity behind this lesson was fascinating to me, and I have never seen anything quite like it. I don't know what your future career plans are, but I truly think your brain has the capacity to do wonderful things.
  - Thanks again! And keep thinking outside the box! 😊
- 2016. **Speaker**. *Talks on Introduction to Electrical and Computer Engineering (ECE)*.
  - The speaker was very articulate and understandable throughout the presentation. The delivery and language used was similar if not better than a native English speaker.
  - You seemed very knowledgably about the topic. You are also very charming. I didn't see any weaknesses.
  - Knew all the information very well and would be a great TA for this course.
  - Seems very knowledgeable on this course and have good teaching skills.

SKILL SETS

Language skills	Mandarin (native) and English	
Computer skills	Programming:	Python, C/C++, JAVA, Android, assembly language, Verilog, VHDL
	Signal Processing:	MATLAB, GNU Radio
	Web Development:	JavaScript, NodeJS, ReactJS, HTML/CSS, Docker, Jekyll, Markdown

ACADEMIC REFERENCES

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