GOOD SYSTEMS

Fiscal Years 2022 and 2023 Biennial Report

The University of Texas at Austin
Research Development
Vice President for Research, Scholarship and Creative Endeavors

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Designing AI technologies that benefit society is our grand challenge.

Artificial intelligence is increasingly ubiquitous, from search engines and image generation to the most advanced military weapons systems. Yet AI technologies have the capacity to be harmful in ways we might not predict. Good Systems is a research initiative that seeks to design AI technologies alongside broader policy and decision-making systems that can protect and improve our world. Our interdisciplinary campus-wide research effort brings together humanists, social scientists, and technologists to investigate how to define, evaluate, and build values-driven AI systems that will transform society for the better.

Good Systems Highlights In Numbers

EXPANDING NETWORKS

121 active researchers

31 UT departments & disciplines

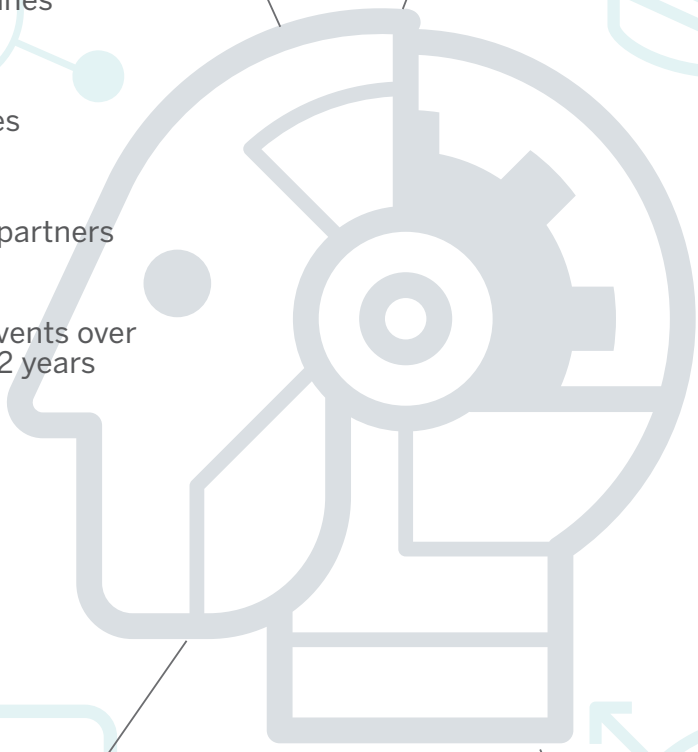
12 schools & colleges

45 external partners

50 hosted events over the past 2 years

ENGAGING STUDENTS

55 undergraduate & graduate student researchers



SCHOLARLY OUTPUT & PUBLICITY

71 scholarly works acknowledging Good Systems support published over the past 2 years

44 news articles over the past 2 years

BUILDING CAPACITY

$18.2 awarded in external funding to date

Program Achievements

In FY22 and FY23, Good Systems continued to build on the work of its first two years. Good Systems' six multi-year **core research projects** made progress in defining, evaluating, and building ethical AI systems to combat mis- and disinformation, build smarter cities, balance privacy and surveillance, mitigate racial biases, create human-robot partnerships, and improve worker safety and well-being.

In addition, Good Systems expanded its network for cross-sector collaboration and research innovation, strengthening ties with the City of Austin and Austin Community College, and developing new national and international partnerships with **MITRE** and the **Trustworthy Autonomous Systems Hub,** among others. Researchers shared results at Good Systems' second and third annual symposium, which engaged students, faculty, and staff at The University of Texas at Austin as well as local government, nonprofit, and industry partners.

Melding with MITRE

In FY22, Good Systems formed a **partnership with the MITRE Corporation**, a nonprofit dedicated to solving problems for a safer world. MITRE's investment in Good Systems supported capacity building across the six core research areas by expanding Good Systems' team expertise and supporting a greater number of faculty members, researchers, and students to engage in this work.

"As consequential use of AI increases, it is vital that we address safety, security and equity concerns. We are thrilled to be working with UT Austin and Good Systems to advance the underlying science in these areas that will enable us to build AI systems that can reach their full potential."

—Douglas Robbins, vice president of engineering and prototyping at MITRE Labs

Workshop participants identify potential projects. Credit: Stacey Ingram Kaleh.

Good Systems and MITRE Collaborative Engagement Workshop

In April 2023, **Good Systems and MITRE researchers convened at UT Austin** to build relationships, identify cross-organizational research projects, and develop action plans for continued collaboration. The two-day workshop resulted in more than 150 project ideas, 32 of which had enough interest and excitement from participants to advance to the next stage and be grouped into six themes: 1) privacy and data standards; 2) smart cities; 3) disinformation; 4) robots; 5) smart tools and the future of work; and 6) digital twin infrastructure.

Participants signed up to work on the projects they were most passionate about. In total, nine projects advanced, and the new cross-organizational teams developed action plans that included research goals, a funding strategy, audiences and stakeholders, and a plan for working together as a team.

Officials from the City of Austin, The University of Texas at Austin, and nonprofit Jail to Jobs cut the ribbon to inaugurate the Georgian Acres Community Hub for Smart Mobility on East Wonsley Drive. Photo courtesy of Austin Transportation.

Planting Transportation Seeds in an Urban Desert

The NSF CIVIC funded project, "Co-creating a Community Hub for Smart Mobility: A University-Government-Nonprofit Partnership"—led by Junfeng Jiao (School of Architecture), Devrim Ikizler (Economics), Sherri Greenberg (LBJ School), Kenneth Fleischmann (School of Information), and Jason JonMichael (City of Austin)—launched the **Georgian Acres Community Hub for Smart Mobility**. The project, which provides services in a neighborhood considered to be a transit desert, is a result of interdisciplinary collaborations formed through earlier Good Systems projects.

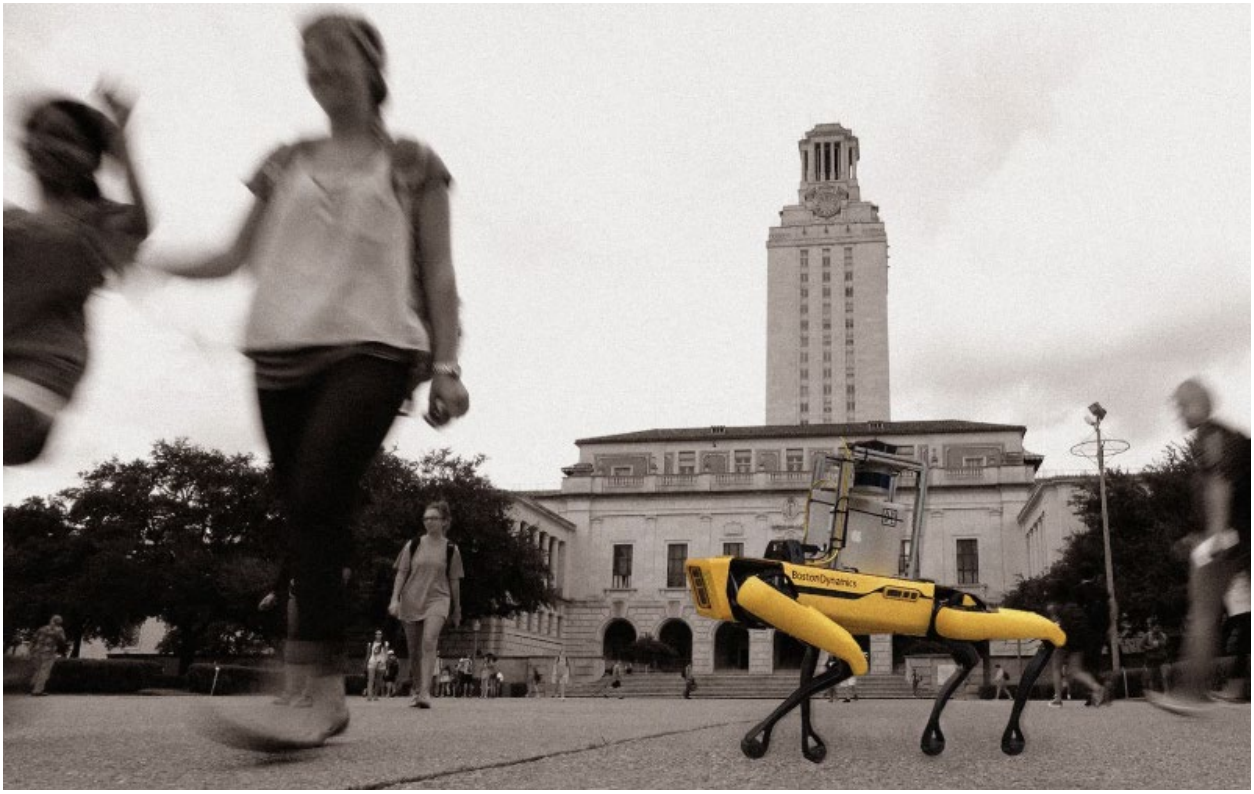
Community-Embedded Robots

Through collaborative, interdisciplinary work on the **Living and Working with Robots project**, a team of Good Systems researchers, including partners at Huston-Tillotson University, was awarded an NSF Growing Convergence Research grant for their project "**Community-Embedded Robots: Understanding Sociotechnical Interactions with Long-term Autonomous Deployments**."

The team will deploy a network of robots on UT's campus and study what it takes to create, safely operate, and maintain this kind of robot network, while also adapting with the humans who live and work around it. The project expands on Living and Working with Robots research and is led by Luis Sentis (Aerospace Engineering and Engineering Mechanics) and co-principal investigators Keri Stephens (Communication Studies), Joydeep Biswas (Computer Science), Elliott Hauser (School of Information), and Justin Hart (Computer Science).

"I think the most exciting thing about our project is we're going to hopefully introduce more-ethical and safety-conscious ways for robots and people to work together,"

—Keri Stephens, project co-PI and co-director of UT's Technology and Information Policy Institute



A "robot dog" on The University of Texas at Austin campus. Credit: Eric Gay/AP

The 2023 Good Systems Symposium keynote speaker, Chad Jenkins, professor of robotics at the University of Michigan, sits down with Good Systems' Sharon Strover, professor in communication, to discuss the future of human-robot interaction. Credit: Lauren Gerson.

Shaping the Future of Ethical AI

Each spring, thought leaders across academic disciplines and industry, government, and nonprofit sectors convene at the University for **Good Systems' annual symposium** to discuss the opportunities and challenges when it comes to ensuring that AI systems are ethical, values-driven, and beneficial to everyone.

The **2022 event** featured a keynote on global social impact of AI in public health and conservation by **Milind Tambe** (Harvard University and Google Research India), panel discussions on smart cities and embedding ethics in AI development across industry, and presentations on findings from the first year of the six core research projects. Highlights of the **2023 program** included a keynote conversation with roboticist Chad Jenkins (University of Michigan), a panel of experts working across the globe to fuel cross-sector collaborations in Ethical AI and AI policy, and roundtables exploring the latest insights from Good Systems researchers and their partners. Both the 2022 and 2023 events also featured interactive poster sessions with Good Systems faculty and student researchers.

Good Systems Contributes to Development of Two New Graduate Programs

One of Good Systems' goals is to increase UT's capacity for educating and training tomorrow's workforce in the design and use of artificial intelligence. To this end, Good Systems faculty contributed their expertise to the development and launch of two graduate school programs: the **Ethical AI Graduate Portfolio Program** and the online **Master of Science in Artificial Intelligence (MSAI)**.

The **Ethical AI Graduate Portfolio Program** is an interdisciplinary, socio-technical program for graduate students from all units across campus focused on anticipating and preparing for the complex interactions between AI-based technologies and society. The program, led by Junfeng Jiao (School of Architecture), was developed by Good Systems and Texas Robotics faculty, including Joydeep Biswas (Computer Science), Ken Fleischmann (School of Information), Justin Hart (Computer Science), Min Kyung Lee (School of Information), Tina Peterson (Computer Science), Luis Sentis (Aerospace Engineering and Engineering Mechanics), and Peter Stone (Computer Science), through the NSF-funded National Research Traineeship program.

The online **Master of Science in Artificial Intelligence (MSAI)**, delivered by the Department of Computer Science and Machine Learning Laboratory, incorporates formal AI ethics training developed in partnership with Good Systems. Ken Fleischmann (School of Information) developed the program's only required course, "Ethics in AI," and Junfeng Jiao (School of Architecture) developed the elective course "Case Studies in Machine Learning," which incorporates AI applications from his Good Systems research in the areas of housing, health, and transportation.

A Trusted Authority on Ethical AI

With the widespread adoption of generative AI technologies such as OpenAI's ChatGPT, there has been an increased appetite among the general public for news that might help explain how technology should be integrated into society. UT faculty were called upon by local and national news media outlets to provide expert commentary on the future of AI. Good Systems faculty, researchers, and partners also shared their expertise with a wider audience through two panel presentations at South by Southwest, Austin's annual international tech, music, and arts showcase.

Good Systems Headlines

UT Austin News Coverage

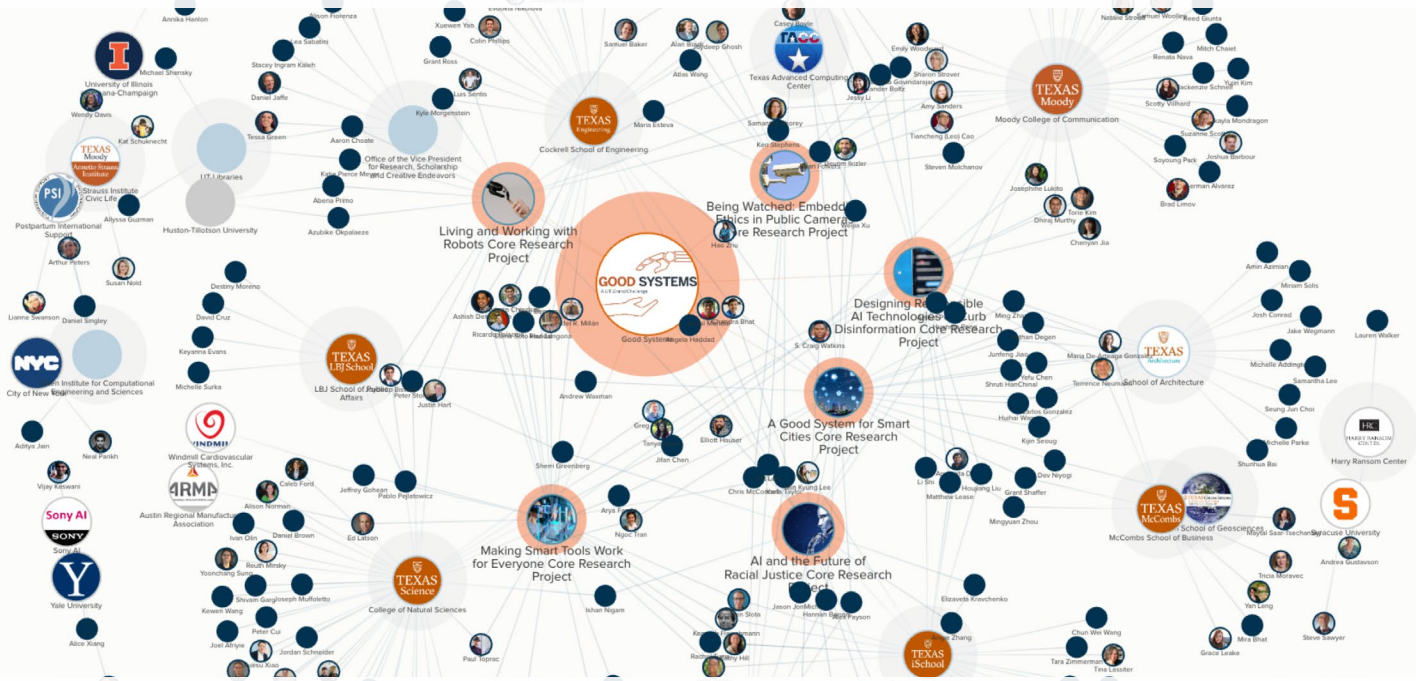
7/20/2023	Genes That Shape Bones Identified, Offering Clues About Our Past and Future
2/7/2023	UT announces launch of artificial intelligence master's program
10/27/2022	Robot dogs to roam campus as part of a UT research project
10/17/2022	Can Robots and Humans Co-exist in Public? UT Campus Study Will Offer Answers
8/7/2022	$1 million investment allows for ethical AI research at UT
9/9/2021	Ethical Artificial Intelligence is Focus of New Robotics Program

External News Features and Mentions

8/21/2023	Beware of the Robot Dog Next Door?
8/14/2023	UT Professors Embracing, Preparing for AI Use in Classrooms
7/17/2023	*Austin Forum*, Episode 57 - Making AI Good for Humans
6/23/2023	Memo to Washington: AI Needs Your Full Attention ... Now!
5/3/2023	AI project at UT Austin focuses on developing beneficial, ethical artificial intelligence
4/14/2023	UT Conference Explores Ethics Around the Breakneck Advancement of AI
3/16/2023	SXSW workshops and local organization working to find homelessness solutions
3/10/2023	Austin Scientists Focus on Helping AI Do Good
3/2/2023	Understanding the ethical future of AI
1/26/2023	AI Master's Program Launches with Ability to Serve Thousands
10/27/2022	It's Okay to Fear the Robot Dogs Coming to UT
10/27/2022	New dog-like delivery robots coming to University of Texas campus
8/8/2022	New Texas partnership aims to define ethics in artificial intelligence
3/5/2022	Challenging the Status Quo in Machine Learning
1/13/2022	4 Steps to Successful City-University Partnerships
11/1/2021	Designing AI for Racial Equity: Translating Ethics into Practice
10/28/2021	Passing The Torch; Good Systems Rolls Out Core Research Projects
9/28/2021	Building Equity in AI: Insights from The University of Texas and Microsoft
9/22/2021	New UT program puts focus on ethical AI, building robots to do 'helpful tasks'
9/16/2021	As AI Becomes Ubiquitous, There are Risks, Says New AI100 Report

UT OVPR Communications

8/22/2023	Speaking Generative AI Truth to Power
4/3/2023	Positive Friction – An Interview with Sharon Strover
3/30/2023	The Risk of Compounding Inequality
12/13/2022	New Ethical AI Graduate Portfolio Program to Launch in 2023
12/12/2022	Planting Transportation Seeds in An Urban Desert
11/9/2022	Disinformation Day 2022 Considers Pressing Need for Cross-sector Collaboration and New Tools for Fact Checkers
11/11/2022	Op-Ed: Social Media Platforms' Struggles with Misinformation and Racism: Challenges and Paths Forward
9/26/2022	Changing of the Good Systems Chairs
8/30/2022	Good Systems Partners with UKRI Trustworthy Autonomous Systems Hub to Support US-UK Research Innovation in Ethical Human-Machine Teaming
7/29/2022	ACM Launches Journal on Responsible Computing with Dr. Ken Fleischmann as Editor-in-Chief
7/21/2022	New Partnership Will Scale Up Investment in Ethical AI Research and Innovation
6/30/2022	Highlights From the 2022 Good Systems Symposium
5/4/2022	Good Systems Awards Summer Fellowships to Faculty, Researchers and Graduate Students
3/9/2022	Good Systems Announces Summer Research Opportunities
3/11/2022	Smart Cities Cannot Be Surveillance Cities
11/8/2021	Bringing Robots into the Real World
10/28/2021	An Algorithm for EMS Response
9/22/2021	Mobility Hub Brings New Options to Northeast Austin 'Transit Desert'



Creating Connections

Good Systems' growing network of researchers draws from nearly every college and school on campus, from the Cockrell School of Engineering to the Colleges of Liberal Arts and Natural Sciences to the LBJ School of Public Affairs. This intellectual diversity is crucial to fostering interdisciplinary research, a key component of the program's success.

Collaborative partnerships extend beyond the University. Good Systems expanded its partnerships locally with the City of Austin, the Austin Forum on Technology and Society, Austin Community College, and others. Good Systems also forged new national and international partnerships with MITRE and the UKRI Trustworthy Autonomous Systems Hub that aim to spark creative, collaborative research that will translate into real-world solutions. At the project level, researchers expanded relationships with community groups such as the Austin Public Library and Measure, and fostered national and international relationships with organizations like Smart Cities Connect and the Open Data Institute. Two core research teams initiated advisory councils to facilitate ongoing dialogue with key stakeholders across sectors.

Explore the **interactive network map** to see how different researchers, schools, and organizations are connected to Good Systems. Search by name, College/School/Unit, or project, or click any node on the map and pause to see its connections appear. You can magnify or expand the view, and you can click on any individual to see which projects they've been affiliated with.

Funded Grants

Through FY23, Good Systems researchers have received $18.2 million in external grants, gifts, and awards that directly enable the grand challenge's work. External awards from the past two fiscal years are listed below. Many of these grant proposals were developed with the support of OVPR's Research Development team.

National Science Foundation
Community-embedded Robots: Understanding Sociotechnical Interactions with Long-term Autonomous Deployments
$3,600,000
Luis Sentis, Cockrell School of Engineering

National Science Foundation
Community-Driven Design of Urban Air Mobility Transportation Management Systems
$1,054,998
Min Kyung Lee, School of Information

MITRE
MITRE Gift
$1,000,000
Good Systems

Mellon Foundation
Strategic Directions to Support Infrastructure for Digital Special Collection
$500,000
Aaron Choate, UT Libraries

Open Philanthropy
Seeking Edits and Explanations from Users to Generate Long, Knowledge-Rich Texts
$432,953
Greg Durrett, College of Natural Sciences

U.S. Department of Transportation
University Transportation Center for Climate-Smart Transportation
$400,014
Junfeng Jiao, School of Architecture

Meta
UT Good Systems-Facebook AI Research Collaboration
$250,000
Peter Stone, College of Natural Sciences

National Science Foundation
Enabling Standards- and Disclosure-Based Regulations in and through Software Systems: Making Algorithmic Work Management Software Accountable to Law
$249,999
Min Kyung Lee, School of Information

MITRE
Co-Creating a Community Platform to Improve Services for People on the Homelessness Continuum
$190,050
Kenneth R. Fleischmann, School of Information

National Science Foundation
Artificial-Intelligence-Based Decision Support for Equitable Food and Nutrition Security
$168,000
Junfeng Jiao, School of Architecture

Sandia National Laboratories
Identifying Rhetorical Devices in Natural Language Models (in Russia-Generated Disinformation Narratives)
$101,105
Kiril Avramov, College of Liberal Arts

UKRI Trustworthy Autonomous Systems Hub
Doctor-centred Auditing of Healthcare AI With Testing of Fairness
$72,470
John Robert Bautista, School of Information

Amazon
Methods for Fair Detection of Toxic Language in Social Media
$71,500
Matt Lease, School of Information

National Science Foundation
Co-Creating a Community Platform to Improve Services for People on the Homelessness Continuum
$50,000
Sherri Greenberg, Lyndon B. Johnson School of Public Affairs

National Science Foundation
Empowering Southern Communities with a Smart Data Hub
$49,865
Arya Farahi, College of Natural Sciences

Microsoft Foundation
Urban Climate Resilience and Hyperlocal Sensing
$25,000
Junfeng Jiao, School of Architecture

National Science Foundation
Human-AI Teaming for Big Data Analytics to Enhance Response to COVID-19 Pandemic
$20,262
Keri Stephens, Moody College of Communication

UKRI Trustworthy Autonomous Systems Hub
TAME Pain: Trustworthy AssessMEnt of Pain - Listening Between the Lines
$18,150
Arya Farahi, College of Natural Sciences

Good Systems Partners

Internal Affiliates

Ethics Unwrapped, McCombs School of Business

Humanities Institute

IC2 Institute

Institute for Foundations of Machine Learning

National Research Traineeship Program on Ethical AI

Texas Robotics

Visual Arts Center

McCombs Center for Analytics and Transformative Technologies

UT Corporate Relations

UT Foundation Relations

University of Texas Libraries

RGK Center for Philanthropy and Community Service

Texas Student Media – The Drag

External Affiliates

AI Now

Austin Community College

Austin Forum on Technology and Society

Austin PBS - Decibel

Austin Public Library

Austin Regional Manufacturers Association

Austin Transit Partnership

CapMetro

Carnegie Foundation for International Peace

Carnegie Mellon Libraries

Chequeado

City of Austin

City Science Lab, Hamburg

DeepMind

Digi.City

Diligent Robotics

Full Fact

Girlstart

Harvard Berkman Klein Center

Huston-Tillotson University

Innovation Bridge Europe

Jail to Jobs

Johns Hopkins University, Institute for Assured Autonomy

KUNGFU.AI

Leadership Austin

MEASURE

Meedan

MetroLab Network

Microsoft

Microsoft Research

MIT

MITRE

North Carolina State, AI in Society

Open Data Institute

Public Interest Technology University Network

Responsible AI UK

Recognize Good

Rutgers University Critical AI

Smart Cities Connect

Smart City Institute HEI

Sony AI

Trustworthy Autonomous Systems Hub

Texas Tribune

US Ignite

World Economic Forum

Publications

Good Systems researchers continued to make advancements through successful multi-disciplinary collaborations that enabled numerous transformative discoveries published in peer-reviewed articles in academic journals. Those from the past two fiscal years are listed below; nearly all are available online.

Bhat, Mira R., Junfeng Jiao, and Amin Azimian. "The Impact of COVID-19 on Home Value in Major Texas Cities." International Journal of Housing Markets and Analysis (August 13, 2021).

Bissiri, Anthony, Junfeng Jiao, and Yefu Chen. "A Scoping Review of the Benefits of Face Mask Use on Pedestrian and Bicyclist Exposure to Air Pollutants." Journal of Transport & Health 26 (September 2022): 101484.

Chen, Jifan, Aniruddh Sriram, Eunsol Choi, and Greg Durrett. "Generating Literal and Implied Subquestions to Fact-Check Complex Claims." October 31, 2022.

Chen, Yefu, and Junfeng Jiao. "Are There Transit Deserts in Europe? A Study Focusing on Four European Cases through Publicly Available Data." Sustainability 14, no. 20 (October 14, 2022): 13182.

Chen, Yefu, Junfeng Jiao, and Arya Farahi. "Disparities in Affecting Factors of Housing Price: A Machine Learning Approach to the Effects of Housing Status, Public Transit, and Density Factors on Single-Family Housing Price." Cities 140 (September 2023): 104432.

Cheng, Myra, Maria De-Arteaga, Lester Mackey, and Adam Tauman Kalai. "Social Norm Bias: Residual Harms of Fairness-Aware Algorithms." Data Mining and Knowledge Discovery, January 23, 2023.

Choi, Seung Jun, Junfeng Jiao, Hye Kyung Lee, and Arya Farahi. "Combatting the Mismatch: Modeling Bike-Sharing Rental and Return Machine Learning Classification Forecast in Seoul, South Korea." Journal of Transport Geography 109 (May 2023): 103587.

Chonkar, Parth, Geethika Hemkumar, Huihai Wang, Daksh Dua, Shikhar Gupta, Yao-Cheng Chan, Justin Hart, et al. "Look to My Lead: How Does a Leash Affect Perceptions of a Quadruped Robot?" In Proceedings of the ICRA Workshop on Social Robot Navigation: Advances and Evaluation. Philadelphia, PA, 2022.

Clement, Tanya E., Andi Gustavson, Allyssa Guzman, Nathan Alexander Moore, and Lauren Walker. "Good Systems Humanist-in-the-Loop: Responsible Data Operations and Workforce Development in Libraries, Archives, and Museums," September 9, 2022.

Cui, Jiaxun, Hang Qiu, Dian Chen, Peter Stone, and Yuke Zhu. "COOPERNAUT: End-to-End Driving with Cooperative Perception for Networked Vehicles," 2022.

Das, Anubrata, Chitrank Gupta, Venelin Kovatchev, Matthew Lease, and Junyi Jessy Li. "ProtoTEx: Explaining Model Decisions with Prototype Tensors." April 11, 2022.

Das, Anubrata, Chitrank Gupta, Venelin Kovatchev, Matthew Lease, and Junyi Jessy Li. "Explaining Model Decisions with Prototype Layers," ACL 2022.

Das, Anubrata, Houjiang Liu, Venelin Kovatchev, and Matthew Lease. "The Need for Human-Centered Design in Fact-Checking Research," 2022.

Das, Anubrata, Houjiang Liu, Venelin Kovatchev, and Matthew Lease. "The State of Human-Centered NLP Technology for Fact-Checking." Information Processing & Management 60, no. 2 (March 2023).

De-Arteaga, Maria, Stefan Feuerriegel, and Maytal Saar-Tsechansky. "Algorithmic Fairness in Business Analytics: Directions for Research and Practice," Productions and Operations Management. 2022.

Durugkar, Ishan, Scott Niekum, Mauricio Tec, and Peter Stone. "Adversarial Intrinsic Motivation for Reinforcement Learning." In Proceedings of the 35th International Conference on Neural Information Processing Systems (NeurIPS 2021), 15. Sydney, Australia, 2021.

Fazelpour, Sina, and Maria De-Arteaga. "Diversity in Sociotechnical Machine Learning Systems." Big Data & Society 9, no. 1 (January 2022).

Govindarajan, Venkata S, Katherine Atwell, Barea Sinno, Malihe Alikhani, David I. Beaver, and Junyi Jessy Li. "Dimensions of Interpersonal Dynamics in Text: Group Membership and Fine-Grained Interpersonal Emotion," 2022.

Goyal, Tanya, Junyi Jessy Li, and Greg Durrett. "News Summarization and Evaluation in the Era of GPT-3," 2022.*

Guo, Sihang, Ruohan Zhang, Bo Liu, Yifeng Zhu, Mary Hayhoe, Dana Ballard, and Peter Stone. "Machine versus Human Attention in Deep Reinforcement Learning Tasks." In Proceedings of the 35th International Conference on Neural Information Processing Systems (NeurIPS 2021), 15. Sydney, Australia, 2021.

Gupta, Soumyajit, Sooyong Lee, Maria De-Arteaga, and Matthew Lease. "Same Same, But Different: Conditional Multi-Task Learning for Demographic-Specific Toxicity Detection," 2023.

Haddad, Angela J., Aupal Mondal, Chandra R. Bhat, Angie Zhang, Madison C. Liao, Lisa J. Macias, Min Kyung Lee, and S. Craig Watkins. "Pedestrian Crash Frequency: Unpacking the Effects of Contributing Factors and Racial Disparities." Accident Analysis & Prevention 182 (March 1, 2023).

Hauser, Elliott, Yao-Cheng Chan, Parth Chonkar, Geethika Hemkumar, Huihai Wang, Daksh Dua, Shikhar Gupta, et al. "'What's That Robot Doing Here?': Perceptions Of Incidental Encounters With Autonomous Quadruped Robots." In Proceedings of the First International Symposium on Trustworthy Autonomous Systems, 1–15. Edinburgh United Kingdom: ACM, 2023.

Hauser, Elliott. "Facts in the Machine: Systems of Record and the Performance of Sociotechnical Truth." Journal of the Association for Information Science and Technology, August 7, 2023, asi.24820.

Hill, Katherine M., Rachel Tunis, Pablo M. Pejlatowicz, Kenneth R. Fleischmann, Sherri R. Greenberg, Raul G. Longoria, and Jose Bendana. "Information Needs of Blue-Collar Workers: Welding Challenges and the Potential of Smart Welding Tools." Proceedings of the Association for Information Science and Technology 59, no. 1 (October 2022): 431–36.

Hill, Katherine, Rebecca Giuntoli, Raksheet Kota, and Kenneth Fleischmann. "Information Needs of Deaf Welders: Improving the Accessibility of Middle-Skill Work." In Proceedings of the ASIS&T Mid-Year Conference. 2023, 2023.

Holstein, Kenneth, Maria De-Arteaga, Lakshmi Tumati, and Yanghuidi Cheng. "Toward Supporting Perceptual Complementarity in Human-AI Collaboration via Reflection on Unobservables," 2022.

Hong, Junyuan, Zhangyang Wang, and Jiayu Zhou. "Dynamic Privacy Budget Allocation Improves Data Efficiency of Differentially Private Gradient Descent." In 2022 ACM Conference on Fairness, Accountability, and Transparency, 11–35. Seoul Republic of Korea: ACM, 2022.

Hu, Jiaheng, Peter Stone, and Roberto Martín-Martín. "Causal Policy Gradient for Whole-Body Mobile Manipulation." arXiv, May 11, 2023.

Jia, Chenyan, Alex Boltz, Angie Zhang, Anqing Chen, and Min Kyung Lee. "Understanding Effects of Algorithmic vs. Community Label on Perceived Accuracy of Hyper-Partisan Misinformation." In Proceedings of the ACM: Human-Computer Interaction: Issue CSCW, April 2022.

Jiao, Junfeng and Connor Phillips. "Artificial Intelligence & Smart City Ethics: A Systematic Review." Paper presented at 2023 IEEE International Symposium on Ethics in Engineering, Science, and Technology. May 18 – 20, 2023.

Jiao, Junfeng, Ryan Hardesty Lewis, Kijin Seong, Arya Farahi, Paul Navratil, Nate Casebeer, and Dev Niyogi. "Fire and Smoke Digital Twin -- A Computational Framework for Modeling Fire Incident Outcomes." May 18, 2023.

Jiao, Junfeng, S. Choi, and Weijia Xu. "Tracking Property Ownership Variance and Forecasting Housing Price with Machine Learning and Deep Learning," 2021

Jiao, Junfeng, Seung Jun Choi, Huihai Wang, and Arya Farahi. "Evaluating Air Quality Status in Chicago: Application of Street View Imagery and Urban Climate Sensors." Environmental Modeling & Assessment, April 21, 2023.

Jiao, Junfeng, Shunhua Bai, and Seung Jun Choi. "Understanding E-Scooter Incidents Patterns in Street Network Perspective: A Case Study of Travis County, Texas." Sustainability 13, no. 19 (September 24, 2021): 10583.

Jiao, Junfeng, Xiaohan Wu, Yefu Chen, and Arya Farahi. "Comparing the Impacts of COVID-19 on Residential Rental Market Across Rental Sectors: Evidence from City of Austin." SSRN Electronic Journal, 2022.

Karnan, Haresh, Anirudh Nair, Xuesu Xiao, Garrett Warnell, Soeren Pirk, Alexander Toshev, Justin Hart, Joydeep Biswas, and Peter Stone. "Socially Compliant Navigation Dataset (SCAND): A Large-Scale Dataset of Demonstrations for Social Navigation," in IEEE Robotics and Automation Letters, 2022.*

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Kovatchev, Venelin, Trina Chatterjee, Venkata S Govindarajan, Jifan Chen, Eunsol Choi, Gabriella Chronis, Anubrata Das, et al. "Longhorns at DADC 2022: How Many Linguists Does It Take to Fool a Question Answering Model? A Systematic Approach to Adversarial Attacks," 2022.

Kun, Eucharist, Emily M. Javan, Olivia Smith, Faris Gulamali, Javier De La Fuente, Brianna I. Flynn, Kushal Vajrala, et al. "The Genetic Architecture and Evolution of the Human Skeletal Form." Science 381, no. 6655 (July 21, 2023)..

Lee, Hakeoung Hannah, and Emma Gargroetzi. "'It's like a Double-Edged Sword': Mentor Perspectives on Ethics and Responsibility in a Learning Analytics–Supported Virtual Mentoring Program." Journal of Learning Analytics, February 28, 2023, 1–16.

Lee, Taeyoung, and Gyo Hyun Koo. "What Drives Belief in COVID-19 Conspiracy Theories? Examining the Role of Uncertainty, Negative Emotions, and Perceived Relevance and Threat." Health Communication, October 12, 2022, 1–11.

Lee, Taeyoung, Thomas J. Johnson, and David H. Weaver. "Navigating the Coronavirus Infodemic: Exploring the Impact of Need for Orientation, Epistemic Beliefs and Type of Media Use on Knowledge and Misperception about COVID-19." Mass Communication and Society, March 17, 2022, 1–26.

Li, Lan, Tina Lassiter, Joohee Oh, and Min Kyung Lee. "Algorithmic Hiring in Practice: Recruiter and HR Professional's Perspectives on AI Use in Hiring." In Proceedings of the 2021 AAAI/ACM Conference on AI, Ethics, and Society, 166–76. Virtual Event USA: ACM, 2021.

Li, Yunyi, Maria De-Arteaga, and Maytal Saar-Tsechansky. "Mitigating Label Bias via Decoupled Confident Learning." AI & HCI Workshop at the 40th International Conference on Machine Learning (ICML), Honolulu, Hawaii,, July 17, 2023.

Liu, Bo, Xingchao Liu, Xiaojie Jin, Peter Stone, and Qiang Liu. "Conflict-Averse Gradient Descent for Multi-Task Learning." In Proceedings of the 35th International Conference on Neural Information Processing Systems (NeurIPS 2021), 20. Sydney, Australia, 2021

Lukito, Josephine, Zhe Cui, An Hu, Taeyoung Lee, and Joao Vicente Seno Ozawa. "States vs. Social Movements: Protests and State Repression in Asia." Media and Communication 10, no. 4 (September 23, 2022).

Mandalapu, Akhil, Junfeng Jiao, and Amin Azimian. "Exploring the Spatial Distribution of Air Pollutants and COVID-19 Death Rate: A Case Study for Los Angeles County, California." International Journal of Geospatial and Environmental Research 9, no. 1 (n.d.).

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