

NA DU

na.du@pitt.edu; <http://nadu-pitt.github.io>
135 North Bellefield Avenue, Pittsburgh, PA 15260

CURRENT POSITION

Assitant Professor, University of Pittsburgh
Department of Informatics and Networked Systems
School of Computing and Information

Sep. 2021 - Present

EDUCATION

University of Michigan, Ann Arbor, MI

Aug. 2017 - Apr. 2021

Ph.D., Industrial & Operations Engineering

Graduate Certificate in Data Science, Michigan Institute for Data Science

- Dissertation: Predicting drivers' takeover performance and designing an adaptive in-vehicle alert system in conditionally automated driving
- Advisor: Dr. X. Jessie Yang
- Committee: Drs. Nadine Sarter, Yili Liu, and Lionel Robert

Zhejiang University, Hangzhou, China

Aug. 2012 - Jun. 2016

B.S., Psychology, Graduate with honors

- Thesis: Reducing racial bias in empathy by challenging race concept: an electrophysiological study

RESEARCH INTERESTS

Human-computer interaction (HCI), human factors (HF), human behavior modeling, human-centered design, human-automation/agent teaming, wearable technology, neuroengineering, intelligent transportation systems, trust in automation

AWARDS AND HONORS

Towner Prize for Distinguished Academic Achievement, University of Michigan	2021
IOE Outstanding Student Award, University of Michigan	2021
HFE WOMAN Rising Star Award	2020
HFES Student Member with Honors Award	2020
Metropolitan Detroit Society for Information Display Academic Award	2020
Rackham Predoctoral Fellowship, University of Michigan (85 awardees/year)	2020 - 2021
Rackham International Students Fellowship, University of Michigan (25 awardees/year)	2018 - 2019
Deans and Engineering Graduate Fellowships, University of Michigan (\$10,200)	2017 - 2018
Mitacs Research Award (Awarded to 476 foreign interns in Canada: \$1,500)	Jun. 2015
China Scholarship Council Scholarship (Awarded to 125 undergraduates: \$3,000)	Jun. 2015
Second Prize of Research and Innovation Scholarship, Zhejiang University	2014 - 2015
Outstanding Undergraduate Scholarship, Zhejiang University	2012 - 2015

PEER-REVIEWED PUBLICATIONS

Journal Publications

- J1. **Du, N.**, Robert, L., & Yang, X. J. (2022). A Cross-cultural Investigation of the Effects of Explanations on Drivers' Trust, Preference, and Anxiety in Highly Automated Vehicles. *Transportation Research Record*. DOI: 10.1177/03611981221100528
- J2. Luo, R., **Du, N.**, & Yang, X. J. (2022). Evaluating the effects of enhanced autonomy transparency on trust, dependence, and human-autonomy team performance over time. *International Journal of Human-Computer Interaction*. DOI: 10.1080/10447318.2022.2097602
- J3. Jackie Ayoub*, **Du, N.***, Yang, X. J., & Zhou, F. (2022). Predicting driver takeover time in conditionally automated driving. *IEEE Transactions on Intelligent Transportation Systems*. (*Equal contribution). DOI: 10.1109/TITS.2022.3154329
- J4. Wu, C., Zhang, W., You, X., **Du, N.** (2021). Which accuracy levels of positioning technologies do drivers really need in connected vehicle settings for safety?. *Accident Analysis Prevention*, 106106. DOI: 10.1016/j.aap.2021.106106
- J5. **Du, N.**, Zhou, F., Pulver E., Tilbury, D. M., Robert, L. P., Pradhan, A. K., & Yang, X. J. (2020). Predicting Driver Takeover Performance in Conditionally Automated Driving. *Accident & Analysis Prevention*. 148, 105748. DOI: 10.1016/j.aap.2020.105748
- J6. **Du, N.**, Yang, X. J., & Zhou, F. (2020). Psychophysiological responses to takeover requests in conditionally automated driving. *Accident & Analysis Prevention*. 148, 105804. DOI: 10.1016/j.aap.2020.105804
- J7. **Du, N.**, Zhou, F., Pulver, E., Tilbury, D. M., Robert Jr, L. P., Pradhan, A. K., & Yang, X. J. (2020). Examining the effects of emotional valence and arousal on takeover performance in conditionally automated driving. *Transportation Research Part C: Emerging Technologies*. 112, 78-87. DOI: 10.1016/j.trc.2020.01.006
- J8. **Du, N.**, Huang, K. Y., & Yang, X. J. (2019). Not All Information Is Equal: Effects of disclosing different types of likelihood information on trust, compliance and reliance, and task performance in human-automation teaming. *Human Factors*. 62 (6), 987-1001. DOI: 10.1177/0018720819862916
- J9. **Du, N.**, Haspiel, J., Zhang, Q., Tilbury, D., Pradhan, A. K., Yang, X. J., & Robert Jr, L. P. (2019). Look who's talking now: Implications of AV's explanations on driver's trust, AV preference, anxiety and mental workload. *Transportation Research Part C: Emerging Technologies*, 104, 428-442. DOI: 10.1016/j.trc.2019.05.025
- J10. Luo, S., Han, X., **Du, N.**, & Han, S. (2018). Physical coldness enhances racial in-group bias in empathy: Electrophysiological evidence. *Neuropsychologia*. 116, 117-125. DOI: 10.1016/j.neuropsychologia.2017.05.002
- J11. **Du, N.**, Yu, K., Ye, Y., & Chen, S. (2017). Validity study of Patient Health Questionnaire-9 items for Internet screening in depression among Chinese University students. *Asia-Pacific Psychiatry*, 9(3), e12266. DOI: 10.1111/appy.12266
- J12. Sheng, F., **Du, N.**, & Han, S. (2016). Degraded perceptual and affective processing of racial out-groups: An electrophysiological approach. *Social Neuroscience*, 1-9. DOI: 10.1080/17470919.2016.1182944

Conference Proceedings

- C1. Pesaru, V., **Du, N.** (2022). Investigating the Effects of Driver Factors on Crash Involvement using SHRP2 Naturalistic Driving Study Dataset. *In Proceedings of the 66th Annual Meeting of the Human Factors and Ergonomics Society (HFES)*. Atlanta, GA. October. (Accepted)
- C2. **Du, N.**, Wu, X., Misu, T., Akash, K. (2022). A Preliminary Study of Modeling Driver Situational Awareness based on SEEV and ACT-R Models. *In Proceedings of the 66th Annual Meeting of the Human Factors and Ergonomics Society (HFES)*. Atlanta, GA. October. (Accepted)

- C3. **Du, N.**, Zhou, F., Tilbury, D., Robert, L. P., & Yang, X. J. (2021). Designing Alert Systems in Takeover Transitions: The Effects of Display Information and Modality. *13th International Conference on Automotive User Interfaces and Interactive Vehicular Applications (AutomotiveUI '21)*. September 9–14, 2021, Leeds, United Kingdom. DOI: 10.1145/3409118.3475155
- C4. **Du, N.**, Kim, J., Zhou, F., Pulver E., Tilbury, D., Robert, L. P., Pradhan, A., & Yang, X. J. (2020). Evaluating Effects of Cognitive Load, Takeover Request Lead Time, and Traffic Density on Drivers' Takeover Performance in Conditionally Automated Driving. *12th International Conference on Automotive User Interfaces and Interactive Vehicular Applications (AutomotiveUI '20)*. September 21–22, 2020, Virtual Event, DC, US. DOI: 10.1145/3409120.3410666
- C5. **Du, N.**, Kim, J., Zhou, F., Tilbury, D., Robert, L. P., Pradhan, A., & Yang, X. J. (2020). Examining effects of scenario type and vehicle speed on takeover readiness and performance in conditionally automated driving. *In Proceedings of the 64th Annual Meeting of the Human Factors and Ergonomics Society (HFES)*. Chicago, IL. October. DOI: 10.1177/1071181320641482
- C6. **Du, N.**, Zhou, F., Pulver E., Tilbury, D. M., Robert, L. P., Pradhan, A. K., & Yang, X. J. (2020). Predicting Takeover Performance in Conditionally Automated Driving. *In Proceedings of the 2020 CHI Conference Extended Abstracts on Human Factors in Computing Systems*. Honolulu, HI. April. DOI: 10.1145/3334480.3382963
- C7. **Du, N.**, Ayoub, J., Zhou, F., Pradhan, A., Robert, L. P., Tilbury, D., Pulver E., & Yang, X. J. (2019). Examining effects of driver's emotion on takeover readiness and performance in highly automated driving. *In Proceedings of the 63rd Annual Meeting of the Human Factors and Ergonomics Society (HFES)*. Seattle, WA. October. DOI: 10.1177/1071181319631391
- C8. Luo, R., **Du, N.**, Huang, K. Y., & Yang, X. J. (2019). Enhancing Transparency in Human-autonomy Teaming via the Option-centric Rationale Display. *In Proceedings of the 63rd Annual Meeting of the Human Factors and Ergonomics Society (HFES)*. Seattle, WA. DOI: 10.1177/1071181319631366
- C9. **Du, N.**, Zhang Q., & Yang, X. J. (2018). Effects of automation reliability and reliability information on trust, dependence and dual-task performance. *In Proceedings of the 62nd Annual Meeting of the Human Factors and Ergonomics Society (HFES)*. Philadelphia, PA. DOI: 10.1177/1541931218621041
- C10. Haspiel, J., **Du, N.**, Meyerson, J., Robert Jr, L. P., Tilbury, D., Yang, X. J., & Pradhan, A. K. (2018, March). Explanations and Expectations: Trust Building in Automated Vehicles. *In Companion of the 2018 ACM/IEEE International Conference on Human-Robot Interaction* (pp. 119-120). ACM. DOI: 10.1145/3173386.3177057
- C11. **Du, N.**, Tilbury, D., Robert, L., Pradhan, A. & Yang, X. J., (2018). A Cross-Cultural Study of Trust Building in Autonomous Vehicles. *The Conference on Autonomous Vehicles in Society: Building a Research Agenda*, East Lansing, MI, May 18-19.
- C12. Zhang, Q., **Du, N.**, Yang, X. J., & Robert, L. (2018). Trust in AVs: The Impact of Expectations and Individual Differences. *The Conference on Autonomous Vehicles in Society: Building a Research Agenda*, East Lansing, MI, May 18-19.

GRANTS

Modeling Driver Situational Awareness in Highly Automated Driving 2022 - 2023
Sole PI: Na Du; Supported by Pitt Momentum Funds Seeding Grants (\$25,000)

Summer Faculty Research Program 2022 Summer
One-month summer salary for faculty Na Du; Supported by the US Department of Veterans Affairs Pittsburgh Healthcare System (VAPHS)

WORKING EXPERIENCE

Honda Research Institute, San Jose, CA

Nov. 2020 - Mar. 2021

Research Intern

- Design, implement, and evaluate in-vehicle human-machine interfaces
- Model drivers' cognitive process when interacting with the system
- Develop performance metrics and assess the systems

TEACHING EXPERIENCE

Course Instructor

- INFSCI 3350: Doctoral Seminar, University of Pittsburgh Fall 2021
- INFSCI 2300: Human Information Processing, University of Pittsburgh Spring 2022

Module Instructor

- IOE 591: Ergonomics Research Methods Laboratory, University of Michigan Winter 2018-2020

Guest Speaker

- IOE 836: Human Performance Seminar, University of Michigan Fall 2018, 2019
- IOE 491: User Interface/User Experience (UI/UX) Design, University of Michigan Fall 2020
- IMSE 317: Engineering Probability and Statistics, University of Michigan-Dearborn Fall 2020

PROFESSIONAL AFFILIATION

Member, ACM SIGCHI	2020 - Present
Member, Transportation Research Board	2020 - Present
Member, IEEE Robotics & Automation Society	2018 - Present
Member, Human Factors and Ergonomics Society	2016 - Present

SERVICE AND LEADERSHIP

Professional Society Service

- Reviewer for Journals
Human Factors, IEEE Transactions on Human-Machine Systems, Applied Ergonomics, Transportation Research Part C: Emerging Technologies, Transactions on Intelligent Transportation Systems, International Journal of Human-Computer Interaction, Behaviour & Information Technology, IEEE Access, Transactions on Human-Robot Interaction, Telematics and Informatics, Scientific Reports
- Reviewer for Conferences
Human Factors and Ergonomics Society (HFES) Annual Meeting (2018-2021), Conference on Human Factors in Computing Systems (CHI) (2020-2022), International Conference on Automotive User Interfaces and Interactive Vehicular Applications (AutomotiveUI) (2020-2022), International Conference on Information Systems (2020-2021), The Conference on Pervasive and Ubiquitous Computing (UbiComp) (2020), The Annual International Conference on Human Robot Interaction (HRI) (2019)
- Panelist, NSF review panel 2022
- Committee member, ACM International Conference on AutomotiveUI 2021 - 2022
- Newsletter editor and webmaster, HFES Surface Transportation Technical Group 2020 - 2022
- Newsletter editor, HFES Aging Technical Group 2020 - 2021
- Committee member, HFES Diversity Committee and Fellows Profile Task Force 2019 - 2021

- Lead organizer, HFES Annual Meeting Student Career Day Oct. 2020
- Session moderator, International Conference on Automotive User Interfaces Sept. 2020
- Session chair, HFES Annual Meeting Oct. 2019
- Student volunteer, HFES Annual Meeting Oct. 2019

University-related Service

- Committee member, Pitt-SCI-DINS faculty search 2021 - 2022
- President/President elect/Web master, UM-HFES student chapter 2017 - 2020
- Volunteer, UM-IOE Prospective Student Visit Day 2018 - 2020
- Representative, UM-IOE Student Leadership Board 2017 - 2018