

# Shenghui (Vivian) Chen

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**Research Interests** My research focuses on human-agent collaboration under incomplete information. I envision agents as capable partners that understand human intent, adapt their behavior, and communicate effectively.

**Education**

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| <b>The University of Texas at Austin, TX, USA</b><br><i>Ph.D. in Computer Science</i><br>Advisor: Ufuk Topcu | 2021–Present |
| <b>The University of Texas at Austin, TX, USA</b><br><i>M.S. in Computer Science</i>                         | 2021–2023    |
| <b>The University of Virginia, VA, USA</b><br><i>B.S. in Computer Science and Mathematics</i>                | 2017–2021    |

- Conference Paper**
- [1] **Shenghui Chen**, Po-han Li, Sandeep Chichali, and Ufuk Topcu. **2025**. “**VIBE: Video-to-Text Information Bottleneck Evaluation for TL; DR**”. In: *Conference on Neural Information Processing Systems (NeurIPS)*.
  - [2] **Shenghui Chen**, Ruihan Zhao, Sandeep Chinchali, and Ufuk Topcu. **2025**. “**Human-Agent Coordination in Games under Incomplete Information via Multi-Step Intent**”. In: *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*.
  - [3] **Shenghui Chen**, Daniel Fried, and Ufuk Topcu. **2024**. “**Human-Agent Cooperation in Games under Incomplete Information through Natural Language Communication**”. In: *International Joint Conference on Artificial Intelligence (IJCAI), Human-Centred AI*.
  - [4] **Shenghui Chen**, Yagiz Savas, Mustafa O. Karabag, Brian Sadler, and Ufuk Topcu. **2024**. “**Deceptive Planning for Resource Allocation**”. In: *American Control Conference (ACC)*.
  - [5] **Shenghui Chen**, Yue Yu, David Fridovich-Keil, and Ufuk Topcu. **2023**. “**Soft-Bellman Equilibrium in Affine Markov Games: Forward Solutions and Inverse Learning**”. In: *Conference on Decision and Control (CDC)*.
  - [6] Yue Yu, **Shenghui Chen**, David Fridovich-Keil, and Ufuk Topcu. **2023**. “**Cost Design in Atomic Routing Games**”. In: *American Control Conference (ACC)*.
  - [7] **Shenghui Chen**, Kayla Boggess, David Parker, and Lu Feng. **2022**. “**Multi-objective controller synthesis with uncertain human preferences**”. In: *International Conference on Cyber-Physical Systems (ICCPS)*.
  - [8] **Shenghui Chen**, Kayla Boggess, and Lu Feng. **2020**. “**Towards transparent robotic planning via contrastive explanations**”. In: *International Conference on Intelligent Robots and Systems (IROS)*.
- Under Review**
- [9] **Shenghui Chen**, Ruihan Zhao, Sandeep Chinchali, and Ufuk Topcu. **2026**. “**IG-MCTS: Human-in-the-Loop Cooperative Navigation under Incomplete Information**”. In: *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*. (under review).

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|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| Journal Article | [10] <b>Shenghui Chen</b> , Yigit E. Bayiz, David Fridovich-Keil, and Ufuk Topcu. <b>2025</b> . “ <i>Relationship Design for Socially-Aware Behavior in Static Games</i> ”. In: <i>Journal of Autonomous Agents and Multi-Agent Systems (JAAMAS)</i> .                                                             |                   |
| Workshop Paper  | [11] <b>Shenghui Chen</b> , Shufang Zhu, Giuseppe De Giacomo, and Ufuk Topcu. <b>2025</b> . “ <i>Learning to Coordinate without Communication under Incomplete Information</i> ”. In: <i>International Workshop on Artificial Intelligence and Formal Verification, Logic, Automata, and Synthesis (OVERLAY)</i> . |                   |
|                 | [12] <b>Shenghui Chen</b> , Zhiming Fan, Haiying Shen, and Lu Feng. <b>2019</b> . “ <i>Performance Modeling and Verification of Load Balancing in Cloud Systems Using Formal Methods</i> ”. In: <i>International Conference on Mobile Ad Hoc and Sensor Systems Workshops</i> .                                    |                   |
| Experience      | <b>The University of Texas at Austin</b> , TX, USA<br><i>Graduate Research Assistant — Center for Autonomy</i>                                                                                                                                                                                                     | 2021–Present      |
|                 | <b>The University of Virginia</b> , VA, USA<br><i>Undergraduate Research Assistant — LinkLab</i>                                                                                                                                                                                                                   | 2018–2021         |
|                 | <b>Teaching Assistant</b> , University of Virginia<br><i>CS 4710: Artificial Intelligence</i>                                                                                                                                                                                                                      | Fall 2020         |
|                 | <b>Teaching Assistant</b> , University of Virginia<br><i>APMA 2130: Ordinary Differential Equations</i>                                                                                                                                                                                                            | Spring, Fall 2019 |
| Review Service  | European Control Conference (ECC)                                                                                                                                                                                                                                                                                  | 2025              |
|                 | IEEE Transactions on Automatic Control                                                                                                                                                                                                                                                                             | 2024              |
|                 | IFAC Workshop on Cyber-Physical Human Systems (CPHS)                                                                                                                                                                                                                                                               | 2024              |
|                 | ACM Transactions on Cyber-Physical Systems (TCPS)                                                                                                                                                                                                                                                                  | 2024              |
|                 | International Conference on Robotics and Automation (ICRA)                                                                                                                                                                                                                                                         | 2024              |
|                 | Conference on Decision and Control (CDC)                                                                                                                                                                                                                                                                           | 2023, 2024        |
|                 | American Control Conference (ACC)                                                                                                                                                                                                                                                                                  | 2023, 2024        |
| Outreach        | NSF Research Experiences for Undergraduates (REACT) Mentor                                                                                                                                                                                                                                                         | 2025              |
|                 | Austin Public Library Code Club for Kids                                                                                                                                                                                                                                                                           | 2024–2025         |
|                 | UT STEM Girl Day                                                                                                                                                                                                                                                                                                   | 2023, 2025        |
|                 | GirlStart, STEM education nonprofit volunteer                                                                                                                                                                                                                                                                      | 2023              |
|                 | Del Valle High School Lecture on AI                                                                                                                                                                                                                                                                                | 2022              |
|                 | Women in Computer Science Mentorship Program, UT Austin                                                                                                                                                                                                                                                            | 2022              |
| Awards          | Student Travel Grant<br><i>American Control Conference (ACC)</i>                                                                                                                                                                                                                                                   | 2023              |
|                 | Outstanding Undergraduate Researcher Award (Honorable Mention)<br><i>Computing Research Association</i>                                                                                                                                                                                                            | 2021              |
|                 | Outstanding Winner & INFORMS Award (top 0.5%)<br><i>Interdisciplinary Contest in Modeling</i>                                                                                                                                                                                                                      | 2019              |

Last updated on 10/2025.