Rex Chen

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Education

CARNEGIE MELLON UNIVERSITY **Aug 2020 – Present**
School of Computer Science Advisors: Fei Fang,
PhD in Societal Computing (Year 4; GPA: 4.25/4.33) Norman Sadeh

UNIVERSITY OF BRITISH COLUMBIA **Sep 2015 – May 2020**
Department of Computer Science Advisor: Kevin Leyton-Brown
Honours BSc in Computer Science (Average: 92.9%)

Selected Conference Papers

* Equal contribution

[1] Chris Cameron, Jason Hartford, Taylor Lundy, Tuan Truong, Alan Milligan, **Rex Chen**, & Kevin Leyton-Brown (2024) "UNSAT Solver Synthesis via Monte Carlo Forest Search". *Proceedings of the 21st International Conference on the Integration of Constraint Programming, Artificial Intelligence, and Operations Research* (CPAIOR '24), pp. 1–20.

[2] **Rex Chen**, Kathleen M. Carley, Fei Fang, & Norman Sadeh (2023) "Purpose in the Machine: Do Traffic Simulators Produce Distributionally Equivalent Outcomes for Reinforcement Learning Applications?". *Proceedings of the 2023 Winter Simulation Conference* (WSC '23), pp. 1–12.

[3] **Rex Chen**, Fei Fang, & Norman Sadeh (2022) "The Real Deal: A Review of Challenges and Opportunities in Moving Reinforcement Learning-Based Traffic Signal Control Systems Towards Reality". *12th International Workshop on Agents in Traffic and Transportation* (ATT '22 @ IJCAI '22), *CEUR Workshop Proceedings* **3173**: 14–31.

[4] Peter Story, Daniel Smullen, **Rex Chen**, Yaxing Yao, Alessandro Acquisti, Lorrie Faith Cranor, Norman Sadeh, & Florian Schaub (2022) "Increasing Adoption of Tor Browser Using Informational and Planning Nudges". *Proceedings on Privacy-Enhancing Technologies* (PETS) **2022.2**, pp. 1–32.

[5] **Rex Chen**, Fei Fang, & Norman Sadeh (2021) "Deep Gaussian Processes for Preference Learning". *Workshop on Human and Machine Decisions at NeurIPS 2021* (WHMD '21 @ NeurIPS '21), pp. 1–12.

[6] **Rex Chen**, Fei Fang, Aleecia M. McDonald, Thomas Norton, & Norman Sadeh (2021) "Fighting the Fog: Evaluating the Clarity of Privacy Disclosures in the Age of CCPA". *Proceedings of the 20th Workshop on Privacy in the Electronic Society* (WPES '21), pp. 73–102.

[7] Chris Cameron*, **Rex Chen***, Jason Hartford*, & Kevin Leyton-Brown (2020) "Predicting Propositional Satisfiability via End-to-End Learning". *Proceedings of the 2020 AAAI Conference on Artificial Intelligence* (AAAI '20), **34**(04): 3324–3331.

Submissions Under Review

[8] **Rex Chen**, Ruiyi Wang, Fei Fang, & Norman Sadeh (2024) "Missing Pieces: How Framing Uncertainty Impacts Longitudinal Trust in AI Decision Aids – A Gig Driver Case Study".

Skills

- **Languages/Frameworks:** Python, PyTorch, R, C#, SQL, Django, Docker, HTML, CSS, JavaScript, Bash, PowerShell, TensorFlow, C++, Java, MATLAB, Celery
- **Knowledge Areas:** Reinforcement learning, transportation research, interpretable machine learning, human-computer interaction, causal inference, statistical modelling, computational game theory

Industrial Work Experience

DATA SCIENTIST INTERN

Lyft **May 2024 – Aug 2024**

- Designed, trained, and productionised ensemble machine learning models to predict the responses of gig drivers to real-time incentive mechanisms across multiple markets.
- Applied causal inference methods to derive actionable insights for setting incentive policies, including a proposed feature envisioned in collaboration with multiple cross-functional teams.

SOFTWARE DEVELOPER CO-OP

Change Healthcare **Sep 2017 – Apr 2018**

- Worked with senior software developers to code, test, and deploy bug fixes and upgrades for two leading healthcare workflow products.
- Took on a primary role in researching, developing, and integrating an authentication service for inter-service communications using an open-source library in the .NET Core framework.

Academic Work Experience

PHD CANDIDATE

Software & Societal Systems Department, Carnegie Mellon University **Aug 2020 – Present**

- Researching applications of multi-agent reinforcement learning, human-computer interaction, and computational game theory to problems in transportation, including traffic signal control and ridesharing.
- Focusing on designing multi-agent systems for deployment in real-world contexts marked by uncertainty.

Awards & Honours

- 2023: **Presidential Graduate Fellowship**, awarded by the CMU School of Computer Science
- 2023: **NSERC Postgraduate Scholarship – Doctoral** for proposal "Large Scale Learning for Multi-Agent Communication & Coordination in Transportation"
  (Highly-ranked applicant, offered a Canadian Graduate Scholarship - Doctoral)
- 2022: **NSF Graduate Research Fellowship – Honourable Mention** for proposal "Large Scale Learning for Multi-Agent Communication & Coordination in Transportation"
- 2022: **Mobility21** (USDOT/CMU National University Transportation Centre) funding for proposal "Alleviating Traffic Congestion: Developing and Evaluating Novel Multi-Agent Reinforcement Learning Traffic Light Coordination Techniques" (PI: Fei Fang; Co-PI: Norman Sadeh)
- 2021: **Tang Family Endowed Innovation Fund** for proposal "Large Scale Learning for Multi-Agent Communication & Coordination in Transportation" (PI: Fei Fang)
- 2018, 2019: **NSERC Undergraduate Student Research Awards**