Bálint Gyevnár

gyevnarb@gmail.com | gbalint.me | github.com/gyevnarb

Education

University of Edinburgh — Edinburgh, UK
Centre for Doctoral Training in Natural Language Processing, PhD — *Sep. 2021 – May 2025*
Supervisors: Stefano V. Albrecht, Shay Cohen, and Christopher G. Lucas

University of Edinburgh — Edinburgh, UK
Integrated Master of Informatics — *Sep. 2016 – May 2021*
Supervisor: Maria Wolters

Nanyang Technological University — Singapore
Exchange in Computer Science — *Aug. 2018 – May 2019*

Peer-Reviewed Publications

Conference

- S. Albrecht, C. Brewitt, J. Wilhelm, B. Gyevnar, F. Eiras, M. Dobre, S. Ramamoorthy. Interpretable Goal-based Prediction and Planning for Autonomous Driving, *International Conference on Robotics and Automation (ICRA)*, 2021

- C. Brewitt, B. Gyevnar, S. Garcin., S. Albrecht. GRIT: Fast, Interpretable, and Verifiable Goal Recognition with Learned Decision Trees for Autonomous Driving, *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2021

Journal

- B. Gyevnar, G. Dagan, C. Haley, S. Guo, F. Mollica. Communicative Efficiency or Iconic Learning: Do developmental and communicative pressures interact to shape colour-naming systems?, *PsyArXiv preprint*, 2022

Workshop

- C. Brewitt, S. V. Albrecht, J. Wilhelm, B. Gyevnar, F. Eiras, M. Dobre, S. Ramamoorthy. Autonomous Driving with Interpretable Goal Recognition and Monte Carlo Tree Search, *Workshop at RSS on Interaction and Decision-Making in Autonomous-Driving*, 2020

Experience

Teaching Assistant — Sep. 2020 – Dec. 2020
University of Edinburgh — *Edinburgh, UK*

- Deliver and moderate online tutorial sessions of ∼12 students for introductory level Machine Learning course.
- Use online tools to effectively communicate with students and explain new concepts.
- Mark and provide feedback on quiz for Computer Systems course of 300+ students.

Research Intern — May 2020 – Oct 2020
Five — *Edinburgh, UK*

- Develop interpretable prediction and planning system for autonomous vehicles using goal-based rational inverse planning and Monte-Carlo tree search.
- Develop fixed-scenario testing and evaluation of prediction and planning system.
- Implement open-world testing environment for prediction and planning system with random map generation.
- Present work at the Royal Society during entrepreneurial workshop.

Current Projects

Explainable Autonomous Vehicle Intelligence | *XAI, MCTS, Autonomous Vehicles* Sep 2021 – Present

* Generating causally justifiable explanations of actions from Monte Carlo search trees.
* Integrating explanation generation with dialogue systems to deliver relevant natural language explanations.
* Evaluation of methods with human participants to measure the effect of explanations on trust and understanding.

Learnability & Communicative Efficiency of Colour Terms Sep 2021 – Present

* Information theoretic measures of communicative efficiency and learnability of human language colour terms.
* Simulate developmental trajectories of human colour term learning using self-organising maps and the World Colour Survey.
* Comparison of the joint cognitive effects of communicative efficiency and learnability on colour term acquisition.