

# Bálint Gyevnár

School of Informatics, University of Edinburgh

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## EDUCATION

### University of Edinburgh

*PhD in Natural Language Processing with Integrated Studies*

*Supervisors: Stefano V. Albrecht, Shay B. Cohen, and Christopher G. Lucas*

Sep. 2021 – May 2025 (est.)

*Edinburgh, UK*

### University of Edinburgh

*Integrated Master of Informatics*

*Supervisor: Maria Wolters*

Sep. 2016 – May 2021

*Edinburgh, UK*

### Nanyang Technological University

*Exchange Student in Computer Science*

Aug. 2018 – May 2019

*Singapore*

## EXPERIENCE

### Teaching Assistant

*University of Edinburgh*

Sep. 2020 – present

*Edinburgh, UK*

- Delivering and moderating online tutorial sessions of ~12 students for introductory machine learning course.
- Coursework and exam marker for courses in the School of Informatics, including Doing Research in NLP, Reinforcement Learning, Computer Systems, and Machine Learning.

### Assistant Supervisor

*University of Edinburgh*

Sep. 2022 – present

*Edinburgh, UK*

- Assistant supervisor for two master's students.
- Supervision topics include robust motion planning for and simulation of autonomous vehicles.

### Vice President & Treasurer

*Edinburgh University Volleyball Club*

Sep. 2022 – Jun. 2024 (est.)

*Edinburgh, UK*

- (2023-24) Vice president leading and organising a sports club of more than 200 members.
- (2022-23) Treasurer managing a cash flow of about £70k.

### Research Assistant

*Five AI Ltd.*

May 2020 – Oct. 2020

*Edinburgh, UK*

- Developed and evaluated IGP2, a goal-based interpretable prediction and planning system for autonomous vehicles with intuitive explanations.
- Scenario-based and open-world testing and evaluation of IGP2.
- Publication at International Conference on Robotics and Automation (ICRA), 2021.

## RESEARCH OUTPUT

### Awards

- AI100 Early Career Essay Competition Featured Essay, “Love, Sex, and AI”, *Standing Committee of the One Hundred Year Study on Artificial Intelligence (AI100)*, Stanford University, 2023;
- Trustworthy Autonomous Systems Early Career Researcher Awards for £4000, Knowledge Transfer Track, *UK Research & Innovation*, 2023;
- Shape the Future of ITS Competition for \$1000, “Cars that Explain: Building Trust in Autonomous Vehicles through Explanations and Conversations”, *IEEE Intelligent Transportation Systems Society*, 2022.

### Conference

- **B. Gyevnár**, N. Ferguson, B. Schafer. “Get Your Act Together: A Comparative View on Transparency in the AI Act and Technology”, *European Conference on Artificial Intelligence (ECAI)*, 2023;
- S.V. Albrecht, C. Brewitt, J. Wilhelm, **B. Gyevnár**, 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. Gyevnár**, S. Garcin., S.V. 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 communicative and acquisition pressures interact to shape colour-naming systems?”, *Entropy*, 24(11), 1542, 2022.

## Other

- **B. Gyevnar**, C. Brewit, S. Garcin, M. Tamborski, and S.V. Albrecht. Code Repository for Interpretable Goal-based Prediction and Planning (IGP2); *Github*, 2022.

## Workshop

- **B. Gyevnar**, N. Ferguson. “Aligning Explainable AI and the Law: The European Perspective”, *AAMAS 2023 Workshop on EXplainable and TRANSPARENT AI and Multi-Agent Systems (EXTRAAMAS)*, 2023;
- **B. Gyevnar**, C. Wang, C.G. Lucas, S.B. Cohen, S.V. Albrecht. “Causal Explanations for Stochastic Sequential Multi-Agent Decision-Making”, *IJCAI 2023 Workshop on Explainable Artificial Intelligence*, 2023;
- **B. Gyevnar**, M. Tamborski, C. Wang, C.G. Lucas, S.B. Cohen, S.V. Albrecht. “A Human-Centric Method for Generating Causal Explanations in Natural Language for Autonomous Vehicle Motion Planning”, Runner-up for best paper, *IJCAI 2022 Workshop on Artificial Intelligence for Autonomous Driving*, 2022;

## PROJECTS

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### Explainable Autonomous Vehicle Intelligence

Sep. 2021 – Present

- Cross-disciplinary collaboration towards trustworthy autonomous vehicles via explanations and conversations.
- Introduced CEMA: a novel system to generate causal explanations for multi-agent decision-making.
- Integrating CEMA with dialogue systems to deliver relevant natural language explanations.
- Evaluation with human participants measuring the effects of explanations on trust and understanding.
- Leading the work with a team of 5+ people within the Autonomous Agents group.

### Aligning Explainable AI and the Law

Nov. 2021 – Present

- Surveyed the explainability and broader transparency requirements of upcoming legislative frameworks for AI.
- Reviewed the legal considerations behind modern XAI techniques and paradigms.
- Identified shared concepts and notional discrepancies between XAI and the Law.
- Paper accepted at ECAI 2023.

### Lead Developer and Maintainer of Interpretable Goal-Based Prediction and Planning for Autonomous Vehicles

May 2021 – Present

- Lead developer and maintainer of open-source Python package for AV prediction and planning.
- Author of comprehensive documentation and users’ manual.
- Python package on GitHub with 62 stars and 17 forks.

## OTHER SKILLS

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**Programming Languages:** Fluent in **Python**. Experienced with **C#**. Some **C++**, Java, Bash, R, etc.

**Natural Languages:** English (fluent), German (advanced), Japanese (intermediate), Hungarian (fluent).

**Software:** CARLA, RoadRunner, Shapely, PyTorch, Pandas, Matplotlib, Django, etc.