

# DANIEL BEECHEY

Email: [djeb20@bath.ac.uk](mailto:djeb20@bath.ac.uk) ♦ Publications: Google Scholar

Department of Computer Science, University of Bath ♦ United Kingdom

Website: <https://djeb20.github.io/>

**Research Interests**      Reinforcement Learning, Explainable Artificial Intelligence  
Hierarchical Reinforcement Learning  
Bounded Rationality, Lifelong Learning

## EDUCATION

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**Ph.D in Computer Science** *2021 - Present*

*University of Bath, Bath, United Kingdom.*

Advisors: Özgür Şimşek (Computer Science), Emma Carmel (Social Policy)

Thesis: How to Explain Reinforcement Learning with Shapley Values

**M.Res in Accountable, Responsible and Transparent AI** *2021 - 2022*

*University of Bath, Bath, United Kingdom.*

Advisors: Özgür Şimşek (Computer Science), Emma Carmel (Social Policy)

Thesis: Explaining Reinforcement Learning with Shapley Values

Overall Mark: 81 (Distinction)

**M.Sc in Data Science** *2020 - 2021*

*University of Bath, Bath, United Kingdom.*

Advisor: Özgür Şimşek

Thesis: Autonomous Routing of Printed Circuit Boards using Hierarchical Reinforcement Learning

Overall Mark: 83 (Distinction)

**B.Sc in Mathematics** *2017 - 2020*

*University of Bath, Bath, United Kingdom.*

Overall Mark: 78 (1st Class)

## PUBLICATIONS

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**Daniel Beechey**, Thomas M. S. Smith and Özgür Şimşek

*Explaining Reinforcement Learning with Shapley Values*

ICML 2023

Toby Lewis-Atwell, **Daniel Beechey**, Özgür Şimşek and Matthew N. Grayson

*Reformulating Reactivity Design for Data-Efficient Machine Learning*

ACS Catalysis, 13(20), 2023

## TEACHING EXPERIENCE

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**M.Sc Reinforcement Learning**, Lecturer *2023*

Co-Lecturer with Joshua Evans and Thomas Smith.

*University of Bath*

**M.Sc Reinforcement Learning (Online)**, Lecturer *2023*

Co-Lecturer with Jessica Nicholson.

*University of Bath*

**M.Sc Dissertation Project**, Supervisor *2023*

Lead Supervisor, 2 Students.

*University of Bath*

**M.Sc Dissertation Project (Online)**, Supervisor *2022 - 2023*

Co-Supervisor with Joshua Evans, 3 Students.

*University of Bath*

<b>B.Sc Dissertation Project</b> , Supervisor Lead Supervisor, 2 Students. <i>University of Bath</i>	<i>2022 - 2023</i>
<b>M.Sc Reinforcement Learning</b> , Teaching Assistant <i>University of Bath</i>	<i>2022 - 2023</i>
<b>M.Sc Dissertation Project</b> , Supervisor Co-Supervisor with Paola Bruscoli and Thomas Cannon, 10 Students. <i>University of Bath</i>	<i>2022</i>
<b>M.Sc Software Technologies for Data Science</b> , Teaching Assistant <i>University of Bath</i>	<i>2022</i>
<b>M.Sc Statistics for Data Science</b> , Teaching Assistant <i>University of Bath</i>	<i>2022</i>
<b>B.Sc Programming, Foundations and Connections</b> , Teaching Assistant <i>University of Bath</i>	<i>2022</i>
<b>B.Sc Mathematical Methods and Applications</b> , Teaching Assistant <i>University of Bath</i>	<i>2021</i>
<b>B.Sc Programming and Discrete Mathematics</b> , Teaching Assistant <i>University of Bath</i>	<i>2021</i>

## TALKS

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<b>Explaining Reinforcement Learning with Shapley Values</b> Bath Conference of Computer Science	<i>2023</i>
Turing Institute Student Presentations	<i>2023</i>

## AWARDS

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Bath Conference of Computer Science, <b>Best Overall Contribution</b>	<i>2023</i>
Inter-AI CDT Conference, <b>Best Poster</b>	<i>2023</i>