LinkedIn Profile as of 20/01/25

Oliver Simmonds

Data and Analytics Graduate at SSE

Southampton, England, United Kingdom

About:

As a Master's graduate in Artificial Intelligence with a passion for innovative technology, I specialise in creating bespoke AI solutions tailored to meet the unique needs of businesses. By leveraging my diverse experience, I aim to help companies harness the full potential of AI, driving growth and efficiency through personalised, cutting-edge applications. I have successfully developed AI models to analyse air quality for policy guidance, engineered performance models for venture capital profit distribution, and made revenue predictions and churn models for a software technology company. I am a highly motivated individual with strong skills in teamwork, leadership, and problem-solving, and I am eager to apply my expertise to tackle new challenges and support the growth of innovative companies.

Activity:

Post – Dec/2024

I'm pleased to share that I've graduated with a Distinction from my MSc in Artificial Intelligence from the University of Southampton, achieving an 80% average grade across the three semesters! I believe this degree will enable me to play a role in the AI revolution by both aiding in the development of AI solutions but also ensuring that AI is something that truly benefits humankind.

My academic highlight from my time at Southampton was being awarded the Richard Newitt Bursary for achieving the highest exam grade average in the School of Electronics and Computer Science (ECS) in the 23-24 academic year. I am immensely proud of this achievement but additionally, this philanthropic bursary has been a huge aid to me financially. Awards such as the Richard Newitt Bursary play a key role in supporting students who wish to push forward the field of technology and I am incredibly grateful to have been the recipient while studying at Southampton.

Through my MSc dissertation, Evolution of Molecular Representations, I developed and tested a novel approach to improve how machine learning models understand molecules, with potential applications in drug discovery. This project involved utilising Southampton's supercomputer, Iridis, to run large evolution algorithms. Through this, I learnt how to use superclusters, can operate Linux and gained proficiency in TensorFlow and scikit-learn.

Through the taught section of my course, I improved my understanding of how to build agentic AI, large machine learning models and, natural language models, providing me with cutting-edge skills to take into industry. I was particularly interested in the focus on ethical AI, a field which I believe will become of increasing importance. Having a thorough understanding of the risks and mitigations associated with AI is a key skill for any AI practitioner and I am proud to have developed my understanding of this area through my MSc.

Outside of academia, I also had the privilege of representing the university football team SUFC.

Playing for SUFC was incredibly enjoyable and offered me an outlook to make many friends outside of my course.

I'm deeply grateful to the University of Southampton and ECS for their incredible support, and I'm excited to build on what I have learnt from my experiences. This course has helped equip me with a skillset which I hope to utilise in industry to develop safe, scalable, and impactful AI. AI will be a transformative technology and I am extremely excited to play a role in this groundbreaking field.

Post Nov/2024

Last week, I had the privilege of attending the SSE AI + Automation Working Group at the London Databricks office. It was fantastic to connect with AI practitioners from across SSE's business units, exchange ideas, and explore how AI is driving innovation within the company.

While in London, I also attended another Databricks event, where I had the chance to hear directly from industry leaders—including AA, BP, Virgin Atlantic, and Heathrow— on the ways AI is enabling breakthroughs in their fields.

I'm excited to embark on the projects that I'll now be involved in, thanks to the connections and discussions made at these events.

Post Oct/2024

Earlier this month, I had the privilege of attending SSE plc's graduate induction event! It was great to connect with many of the other 141 graduates, especially my colleagues in the IT team. Additionally, I enjoyed getting to hear talks from the leadership team about SSE's culture and vision. Some of my highlights included briefly meeting SSE's CEO and also engaging in an in-depth discussion with our CIO about the pivotal role AI will play in SSE's journey towards NetZero. In just my first month at SSE, I've already delved into some exciting AI initiatives and met a fantastic network of colleagues. SSE's commitment to and investment in graduate development is evident and I am extremely excited to embark on my career here.

#SSEGraduates2024

Post Aug/2024

I am now approaching the conclusion of my internship with the School of Engineering, University of Southampton, where I had the opportunity to investigate air quality in Hampshire under the supervision of Christina Vanderwel. This project, done in collaboration with Hampshire councils and funded by the Low Cost Comfort Centre of Excellence and Public Policy | Southampton, uncovered some insightful results that will now be used to help inform local policy.

A highlight of my internship was presenting our findings at the 2024 Low Cost Air Quality Sensor Conference in Camden, London. It was great to share our ideas, receive feedback on our work, and engage in discussions with others in the field. I believe collaboration is vital in this field, as air pollution often spreads beyond its source, impacting neighbouring regions. By working together across areas, we can address this issue more effectively.

It has been a valuable experience applying AI and data science to real-world problems that can drive positive change. Improving air quality is a worthwhile cause due to its direct impact on public health, and I'm proud to have contributed to this important work. I now look forward to applying these new skills and insights gained from this internship in future challenges!

Low Cost Comfort Centre of Excellence: https://lnkd.in/ekvNzTPH

Public Policy | Southampton: https://lnkd.in/eRPX4Sit

Post Sep/2023

I am proud to announce my graduation from the University of Bristol with a BSc in Mathematics, achieving a First Class Honours! My time at Bristol has been immensely enjoyable and rewarding. The academic rigor at Bristol pushed me to achieve 81% as my final grade, a testament to the dedication and support of both my professors and peers.

The University of Bristol gave me the opportunity to gain experience as a teaching assistant in the Mathematics department, allowing me to share my passion for the subject and contribute to the learning journey of fellow students. Serving as the Vice President of the Futsal society at the University helped me develop strong organisational, collaborative and leadership skills.

I am excited to step into the next chapter of my education starting a masters in Artificial Intelligence at the University of Southampton. This path wouldn't have been possible without the solid foundation and transformative experiences I gained at Bristol, for which I am immensely grateful.

Post Aug/2023

I have recently returned from the European Universities Futsal Championship in Split, Croatia, where I had the privilege to represent the University of Bristol on an international stage. The experience was both; thoroughly enjoyable and one from which I learned a lot.

Experience:

SSE

Data and Analytics GraduateData and Analytics Graduate

SSE plc · Full-timeSSE plc · Full-timeSep 2024 - Present · 5 mosSep 2024 to Present · 5 mosReading, England, United Kingdom · HybridReading, England, United Kingdom · Hybrid

- Working on the SSE Corporate IT graduate scheme specialising in data and analytics.Working on the SSE Corporate IT graduate scheme specialising in data and analytics.

University of Southampton

Artificial Intelligence EngineerArtificial Intelligence Engineer

University of Southampton · FreelanceUniversity of Southampton · FreelanceFeb 2024 - Sep 2024 · 8 mosFeb 2024 to Sep 2024 · 8 mosSouthampton, England, United Kingdom · HybridSouthampton, England, United Kingdom · Hybrid

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- Working for Dr Christina Vanderwel of the University of Southampton and the local councils of Hampshire, we developed artificial intelligence to give an in-depth analysis of air quality in the area. This gave insight into the leading causes of PM2.5 pollution and how this dispurses. We modelled daily fluctuations day and identified seasonal patterns using novel artificial intelligence. The results were unique and offered a new understanding of air quality in Hampshire which will be used directly to help guide policy and improve local air quality.Working for Dr Christina Vanderwel of the University of Southampton and the local councils of Hampshire, we developed artificial intelligence to give an in-depth analysis of air quality in the area. This gave insight into the leading causes of PM2.5 pollution and how this dispurses. We modelled daily fluctuations day and identified seasonal patterns using novel artificial intelligence. The results were unique and offered a new understanding of air quality in Hampshire which will be used directly to help guide policy and improve local air quality.

University of Bristol

Mathematical Programming Teaching InstructorMathematical Programming Teaching Instructor

University of Bristol · Part-timeUniversity of Bristol · Part-timeJan 2023 - May 2023 · 5 mosJan 2023 to May 2023 · 5 mosBristol, England, United Kingdom · On-siteBristol, England, United Kingdom · On-site

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  - Working as a teaching instructor for the Python-focused second-year University of Bristol Mathematics module, Mathematical Programming, I assisted my peers in understanding key Python topics. This involved me answering general syntax questions as well as helping students solve complex problems.
    I engaged with students in an encouraging manner and broke down challenging concepts into comprehensible chunks. This work allowed me to grow my proficiency in Python by forcing me to rethink knowledge I had taken for granted and break it down into fundamental principles.
    This role came with the responsibility of teaching efficient and succinct methods to solve problems, which encouraged me to improve the quality of my own written code. This job helped me learn to effectively communicate my Python code to others , thereby improving the interpretability of my work.Working as a teaching instructor for the Python-focused second-year University of Bristol Mathematics module, Mathematical Programming, I assisted my peers in understanding key Python topics. This involved me answering general syntax questions as well as helping students solve complex problems. I engaged with students in an encouraging manner and broke down challenging concepts into comprehensible chunks. This work allowed me to grow my proficiency in Python by forcing me to rethink knowledge I had taken for granted and break it down into fundamental principles. This role came with the responsibility of teaching efficient and succinct methods to solve problems, which encouraged me to improve the quality of my own written code. This job helped me learn to effectively

communicate my Python code to others , thereby improving the interpretability of my work.

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Systemnova.vc

Performance Model EngineerPerformance Model Engineer

Systemanova.vc · ContractSystemanova.vc · ContractMar 2023 - Apr 2023 · 2 mosMar 2023 to Apr 2023 · 2 mosLondon, England, United Kingdom · RemoteLondon, England, United Kingdom · Remote

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  - Contracted to work as a team of four, we developed a model to distribute the profits of one of Europe's largest angel-based venture capitalist programs. Collaboratively, we developed methods to incentivise maximum performance from the angle investors whiles minimising Systemanova's risk. We ran simulations of various scenarios and used Bayesian hyperparameter tunning to optimise our model to meet the employer's requirements. Then, through continued dialog with Systemanova, we fine-tunned the model for certain extreme cases, such as one where all angels perform poorly. After developing the model in Python, we transferred it to Excel, enabling easy deployment and customisation for non-technical users.
    This work enabled me to develop collaborative skills and experience the dynamic of working for an employer to complete a task which has a significant impact on a company's performance.Contracted to work as a team of four, we developed a model to distribute the profits of one of Europe's largest angel-based venture capitalist programs. Collaboratively, we developed methods to incentivise maximum performance from the angle investors whiles minimising Systemanova's risk. We ran simulations of various scenarios and used Bayesian hyperparameter tunning to optimise our model to meet the employer's requirements. Then, through continued dialog with Systemanova, we fine-tunned the model for certain extreme cases, such as one where all angels perform poorly. After developing the model in Python, we transferred it to Excel, enabling easy deployment and customisation for non-technical users. This work enabled me to develop collaborative skills and experience the dynamic of working for an employer to complete a task which has a significant impact on a company's performance.

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BigHand

Data Science InternData Science Intern

BigHand · InternshipBigHand · InternshipJul 2022 - Aug 2022 · 2 mosJul 2022 to Aug 2022 · 2 mosLondon, England, United Kingdom · HybridLondon, England, United Kingdom · Hybrid

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- During my internship at the software technology company BigHand, I was in entrusted with making revenue predictions, measuring forecasting accuracy, and investigating churn models.
  By analysing historic pipeline data, I used regression, extrapolation, and statistical distributions to predict revenue based on the company's pipeline. This method proved to be highly effective, outperforming predictions made by sales reps and achieving accuracy within 5% of the true figure during my time at BigHand.
  I was exposed to the machine learning algorithms used by the company to predict churn rates of clients and shown how this information is used to make decisions regarding product prices. An understanding of machine learning was shown to be an invaluable and sought-after skill, further fuelling my desire to study Artificial Intelligence at the University of Southampton.
  At BigHand, I was trained to interact with Excel, PowerBi and Salesforce, enabling me to communicate my work in a standardised manner. Additionally, I gained exposure to a tech company's work environment.During my internship at the software technology company BigHand, I was in entrusted with making revenue predictions, measuring forecasting accuracy, and investigating churn models. By analysing historic pipeline data, I used regression, extrapolation, and statistical distributions to predict revenue based on the company's pipeline. This method proved to be highly effective, outperforming predictions made by sales reps and achieving accuracy within 5% of the true figure during my time at BigHand. I was exposed to the machine learning algorithms used by the company to predict churn rates of clients and shown how this information is used to make decisions regarding product prices. An understanding of machine learning was shown to be an invaluable and sought-after skill, further fuelling my desire to study Artificial Intelligence at the University of Southampton. At BigHand, I was trained to interact with Excel, PowerBi and Salesforce, enabling me to communicate my work in a standardised manner. Additionally, I gained exposure to a tech company's work environment.

Projects:

- Investigating Generalisation of Reinforcement Learning AlgorithmsInvestigating Generalisation of Reinforcement Learning Algorithms

Jan 2023 - Apr 2023Jan 2023 - Apr 2023

Associated with University of BristolAssociated with University of Bristol

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    - Co-authored a research project gaining greater insight on both machine learning and the fundamentals of generalisation, an area of AI which is becoming of increasing importance.
      In this project we used the OpenAI Gym environments to hyperparameter tune various modern reinforcement learning algorithms, such as Q-learning,

Deep Q Networks (DQN), Proximal Policy Optimisation (PPO), using Bayesian hyperparameter optimisation. We then used cross-validation to investigate which methods were best at generalisation, giving each algorithm an 'inter-algorithm normalisation' score to test this rigorously. To conduct this research, we had to modify each algorithm to standardise the testing and then checked their performance against Stable Baselines. Our findings revealed that DQNs were the best at generalization, although they were occasionally outperformed by PPO.Co-authored a research project gaining greater insight on both machine learning and the fundamentals of generalisation, an area of AI which is becoming of increasing importance. In this project we used the OpenAI Gym environments to hyperparameter tune various modern reinforcement learning algorithms, such as Q-learning, Deep Q Networks (DQN), Proximal Policy Optimisation (PPO), using Bayesian hyperparameter optimisation. We then used cross-validation to investigate which methods were best at generalisation, giving each algorithm an 'inter-algorithm normalisation' score to test this rigorously. To conduct this research, we had to modify each algorithm to standardise the testing and then checked their performance against Stable Baselines. Our findings revealed that DQNs were the best at generalization, although they were occasionally outperformed by PPO.

- Code Breaking with Statistical PhysicsCode Breaking with Statistical Physics

Jan 2022 - May 2022Jan 2022 - May 2022

Associated with University of BristolAssociated with University of Bristol

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  - Co-authored a project aimed at developing statistical techniques using Python to break various types of encryptions. We started with simple ciphers and gradually worked towards more complex encryptions, discovering more efficient and sophisticated ways of working with Python along the way.

Skills:

Applied Machine LearningApplied Machine Learning

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University of SouthamptonUniversity of Southampton

- [Deep Reinforcement LearningDeep Reinforcement Learning]

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University of SouthamptonUniversity of Southampton

- [TensorFlowTensorFlow]

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University of SouthamptonUniversity of Southampton

- [Scikit-LearnScikit-Learn]

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University of SouthamptonUniversity of Southampton

- [High Performance Computing (HPC)High Performance Computing (HPC)]

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University of SouthamptonUniversity of Southampton

- Supercomputing Supercomputing
    - University of SouthamptonUniversity of Southampton
- UnixUnix
    - University of SouthamptonUniversity of Southampton
- LinuxLinux
    - University of SouthamptonUniversity of Southampton
- Shell ScriptingShell Scripting

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University of SouthamptonUniversity of Southampton

- Linux/UnixLinux/Unix
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University of SouthamptonUniversity of Southampton

- Evolutionary AlgorithmsEvolutionary Algorithms
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University of SouthamptonUniversity of Southampton

- Big Data AnalyticsBig Data Analytics
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University of SouthamptonUniversity of Southampton

- Scientific ResearchScientific Research

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University of SouthamptonUniversity of Southampton

- [Drug Discovery TechnologiesDrug Discovery Technologies]

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University of SouthamptonUniversity of Southampton

- [AI EthicsAI Ethics]

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University of SouthamptonUniversity of Southampton

- [Risk Mitigation in AIRisk Mitigation in AI]

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University of SouthamptonUniversity of Southampton

- [Scalable AI SolutionsScalable AI Solutions]

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University of SouthamptonUniversity of Southampton

- [Agentic AI DevelopmentAgentic AI Development]

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University of SouthamptonUniversity of Southampton

- [Software Project ManagementSoftware Project Management]

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University of SouthamptonUniversity of Southampton

- [Research Writing and DocumentationResearch Writing and Documentation]

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University of SouthamptonUniversity of Southampton

- Data ModelingData Modeling
    - Data and Analytics Graduate at SSE plcData and Analytics Graduate at SSE plc
- VisualizationVisualization
    - Performance Model Engineer at Systemanova.vcPerformance Model Engineer at Systemanova.vc
- Data VisualizationData Visualization
    - Performance Model Engineer at Systemanova.vcPerformance Model Engineer at Systemanova.vc
- Data AnalyticsData Analytics
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- 2 experiences across SSE plc and 1 other company2 experiences across SSE plc and 1 other company

- Predictive ModelingPredictive Modeling

- 2 experiences across University of Southampton and 1 other company2 experiences across University of Southampton and 1 other company

- Predictive AnalyticsPredictive Analytics

- Data Science Intern at BigHandData Science Intern at BigHand

- Applied MathematicsApplied Mathematics

Data Science Intern at BigHandData Science Intern at BigHand

- Computer ScienceComputer Science
  - University of BristolUniversity of Bristol
- Computer SimulationsComputer Simulations
  - University of BristolUniversity of Bristol
- StatisticsStatistics
  - University of BristolUniversity of Bristol
- Statistical ModelingStatistical Modeling

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University of BristolUniversity of Bristol

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Statistical ProgrammingStatistical Programming

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University of BristolUniversity of Bristol

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Statistical ComputingStatistical Computing

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University of BristolUniversity of Bristol

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Time ManagementTime Management

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Data Science Intern at BigHandData Science Intern at BigHand

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University of BristolUniversity of Bristol

- Reinforcement LearningReinforcement Learning
    - University of BristolUniversity of Bristol
        - Investigating Generalisation of Reinforcement Learning AlgorithmsInvestigating Generalisation of Reinforcement Learning Algorithms
- OpenAI GymOpenAI Gym
    - University of BristolUniversity of Bristol
        - Investigating Generalisation of Reinforcement Learning AlgorithmsInvestigating Generalisation of Reinforcement Learning Algorithms
- Mathematical ModelingMathematical Modeling
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- 2 experiences across Systemanova.vc and 1 other company2 experiences across Systemanova.vc and 1 other company
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University of BristolUniversity of Bristol

- Mathematical ProgrammingMathematical Programming
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- 3 experiences across University of Bristol and 2 other companies3 experiences across University of Bristol and 2 other companies
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University of BristolUniversity of Bristol

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Investigating Generalisation of Reinforcement Learning AlgorithmsInvestigating Generalisation of Reinforcement Learning Algorithms

- **Show all 4 details**

- ProgrammingProgramming

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  - [3 experiences across University of Bristol and 2 other companies3 experiences across University of Bristol and 2 other companies]
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University of BristolUniversity of Bristol

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Investigating Generalisation of Reinforcement Learning AlgorithmsInvestigating Generalisation of Reinforcement Learning Algorithms

  - **Show all 4 details**

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R (Programming Language)R (Programming Language)

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University of BristolUniversity of Bristol

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Big DataBig Data

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Data Science Intern at BigHandData Science Intern at BigHand

- [Statistical Data AnalysisStatistical Data Analysis]

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Data Science Intern at BigHandData Science Intern at BigHand

- [Data AnalysisData Analysis]

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Data Science Intern at BigHandData Science Intern at BigHand

- [Decision TreesDecision Trees]

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University of BristolUniversity of Bristol

- [Natural Language Processing (NLP)Natural Language Processing (NLP)]

- [2 educational experiences at University of Bristol and 1 other school2 educational experiences at University of Bristol and 1 other school]

- [NumPyNumPy]

University of BristolUniversity of Bristol

- [Machine Learning AlgorithmsMachine Learning Algorithms]

Investigating Generalisation of Reinforcement Learning AlgorithmsInvestigating Generalisation of Reinforcement Learning Algorithms

- [Data ManagementData Management]

Data Science Intern at BigHandData Science Intern at BigHand

- Deep LearningDeep Learning
    - Investigating Generalisation of Reinforcement Learning AlgorithmsInvestigating Generalisation of Reinforcement Learning Algorithms
- Project ManagementProject Management
    - 
      Artificial Intelligence Engineer at University of SouthamptonArtificial Intelligence Engineer at University of Southampton
    - Code Breaking with Statistical PhysicsCode Breaking with Statistical Physics
- Project PlanningProject Planning
    - Code Breaking with Statistical PhysicsCode Breaking with Statistical Physics

- TeamworkTeamwork
    - Data and Analytics Graduate at SSE plcData and Analytics Graduate at SSE plc
    - Investigating Generalisation of Reinforcement Learning AlgorithmsInvestigating Generalisation of Reinforcement Learning Algorithms
- Organization SkillsOrganization Skills
    - Investigating Generalisation of Reinforcement Learning AlgorithmsInvestigating Generalisation of Reinforcement Learning Algorithms
    - Code Breaking with Statistical PhysicsCode Breaking with Statistical Physics
- Analytical SkillsAnalytical Skills
    - Data Science Intern at BigHandData Science Intern at BigHand

- Data ScienceData Science
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Data Science Intern at BigHandData Science Intern at BigHand

- Microsoft Power BIMicrosoft Power BI
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Data Science Intern at BigHandData Science Intern at BigHand

- Machine LearningMachine Learning
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- 2 experiences across SSE plc and 1 other company2 experiences across SSE plc and 1 other company
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- Artificial Intelligence (AI)Artificial Intelligence (AI)

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- 4 experiences across SSE plc and 3 other companies4 experiences across SSE plc and 3 other companies
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- 2 educational experiences at University of Bristol and 1 other school2 educational experiences at University of Bristol and 1 other school
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Investigating Generalisation of Reinforcement Learning AlgorithmsInvestigating Generalisation of Reinforcement Learning Algorithms

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Collaborative Problem SolvingCollaborative Problem Solving

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Performance Model Engineer at Systemanova.vcPerformance Model Engineer at Systemanova.vc

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Team LeadershipTeam Leadership

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Performance Model Engineer at Systemanova.vcPerformance Model Engineer at Systemanova.vc

Code Breaking with Statistical PhysicsCode Breaking with Statistical Physics

CommunicationCommunication

Mathematical Programming Teaching Instructor at University of BristolMathematical Programming Teaching Instructor at University of Bristol

InitiativeInitiative

Mathematical Programming Teaching Instructor at University of BristolMathematical Programming Teaching Instructor at University of Bristol

Python (Programming Language)Python (Programming Language)

- 3 experiences across University of Southampton and 2 other companies3 experiences across University of Southampton and 2 other companies
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Investigating Generalisation of Reinforcement Learning AlgorithmsInvestigating Generalisation of Reinforcement Learning Algorithms

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Code Breaking with Statistical PhysicsCode Breaking with Statistical Physics

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Microsoft ExcelMicrosoft Excel

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- 2 experiences across Systemanova.vc and 1 other company2 experiences across Systemanova.vc and 1 other company
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MathematicsMathematics

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Artificial Intelligence Engineer at University of SouthamptonArtificial Intelligence Engineer at University of Southampton

- Problem SolvingProblem Solving
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Mathematical Programming Teaching Instructor at University of BristolMathematical Programming Teaching Instructor at University of Bristol

- LeadershipLeadership
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Investigating Generalisation of Reinforcement Learning Algorithms