

# Nawid Keshtmand

Bristol, United Kingdom | +44 (0) 75428 74021 | [yl18410@bristol.ac.uk](mailto:yl18410@bristol.ac.uk)

I am a hardworking and determined individual, who strives to continuously move outside my comfort zone to grow. I aim to excel at any task I am given and can work effectively on my own, but I also understand the importance of working in a team. I am striving towards a career in using machine learning, specifically deep learning, to solve problems in society and make an impact on the lives of millions of people.

## Qualifications

<b>PhD:</b>	<b>University of Bristol</b> Future Autonomous and Robotics Systems	<b>Sept '18 – Sept '23</b>
<b>MSc:</b>	<b>Imperial College London</b> First Class Honours, Advanced Mechanical Engineering	<b>Sept '17 – Sept '18</b>
<b>BSc:</b>	<b>Imperial College London</b> First Class Honours, Chemistry	<b>Sept '13 – Sept '16</b>
<b>A – Levels:</b>	<b>Preston Manor Sixth Form</b> A2: Biology (A*), Maths (A*), Chemistry (A*) AS: Biology (A), Maths (A), Chemistry (A), Physics (A)	<b>Sept '11 – July '13</b>

## Technical Skills

- Proficient in Python and MATLAB programming languages.
- Proficient in machine learning and deep learning frameworks, including scikit – learn, PyTorch, PyTorch Lightning and Hugging Face.
- Experienced user of Weights and Biases experiment tracking tools for managing machine learning experiments.
- Skilled user of Latex markup language for report writing.
- Proficient user of data analysis libraries such as NumPy and Pandas as well as visualization tools such as Matplotlib, Seaborn, and Vega – lite.
- Experience with Git and GitHub processes for version control.

## Topics & Projects

### PhD Research Project

**Oct '19 – Sept '23**

- Investigating the properties of self-supervised contrastive learning, which makes it effective for outlier detection. This involves analysing different variants of contrastive learning and examining what is common in the representations in the data obtained from the different contrastive learning approaches.
- Developing novel approaches for outlier detection using the concept of typicality in conjunction with representations learned from contrastive learning.
- Developing an approach to explain the reason a data point is considered an outlier based on the concepts of class-discriminative and non-class discriminative features.

**Sept '18 – Sept '19**

### **First Year Robotics Research Project**

- Trained agents in a competitive predator – prey setting in a discrete grid world using Deep Q – learning, as well as policy gradient approaches to understand the behaviour of an online adaptive multi-agent system.
- Analysed the behaviour of the predator and prey by building decision trees using the states and actions of the different agents. Found that both the prey and predator agents were behaving in an intuitive manner but were cycling through the same behaviours during the adaption process.

### **MSc Module – COMS30007: Machine Learning**

**Sept '18 – Jan '19**

- Obtained a strong foundation in Bayesian statistics by completing various coding assignments related to the Bayesian interpretation of machine learning algorithms such as classification and regression tasks.

### **MSc Mechanical Engineering Research Project**

**Oct '17 – Sept '18**

- Examined MATLAB and C# algorithms for the classification of muscle contractions from mechanomyography signals and implemented linear discriminant analysis, support vector machine and convolutional neural network classifiers into an existing human-machine interface.
- Utilized the human-machine interface to develop a game to aid stroke victim rehabilitation.

## **Employment History**

---

### **Momentum Scooters: Research and Development Intern**

**Mar '23 – May '23**

- Building a machine learning pipeline to classify different users based on seat pressure values.
- Using machine learning in conjunction with a proportional-integral-derivative controller to predict and optimize user comfort.

### **University of Bristol: Machine Learning research associate**

**Jan '23 – Mar '23**

- Analyzing intensive care unit (ICU) patients' health data to find patterns or clusters which can aid in personalizing patient treatment.
- Developing machine learning models to predict when ICU patients can be discharged safely.

### **Adarga AI: Data Scientist/Machine Learning Engineer Intern**

**Jun '22 – Aug '22**

- Working on projects which involve transfer learning with large pretrained transformer-based language models to perform natural language tasks such as sentiment analysis on social media data.

## **Additional Information**

---

- Attended the DeepLearn 2019 Summer School and learnt about areas of research in Deep Learning, such as Deep Generative models and adversarial examples.
- Graduated in the top 5 of my class for my BSc and included in the Imperial College Chemistry Dean's list.
- Active listener of Machine Learning podcasts, such as Robot Brain, Last Week in AI and Machine Learning Street Talk.
- English (native) and Persian (fluent).