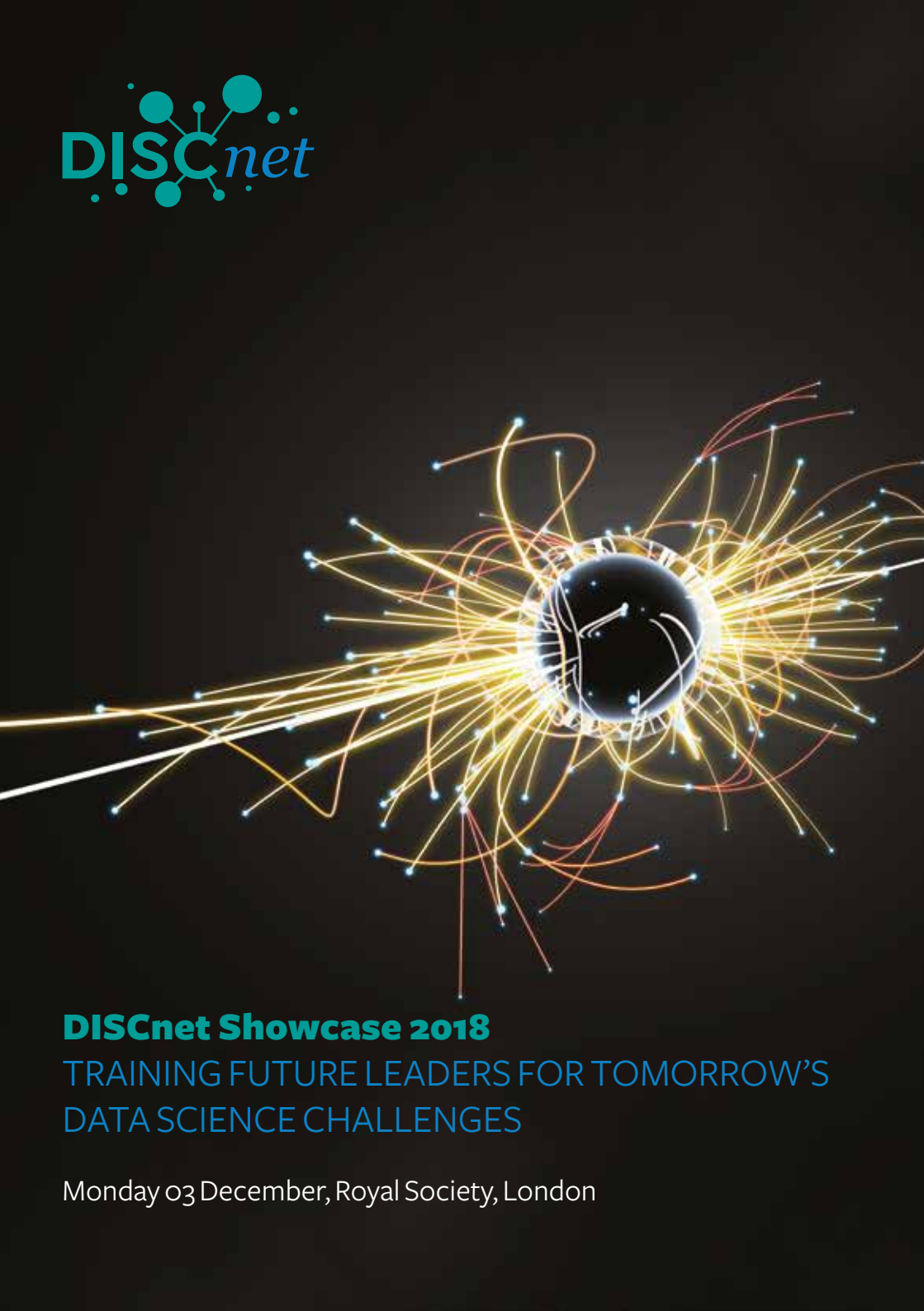

DISCnet Showcase 2018

TRAINING FUTURE LEADERS FOR TOMORROW'S DATA SCIENCE CHALLENGES

Monday 03 December, Royal Society, London

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EVENING PROGRAMME

	Marble Hall
18:00	Registration and welcome
	Kohn Centre
18:30	Welcome from the Chair of the Industrial Advisory Board, Brian Luff, Critical Software
18:35	The Royal Science and Data Science, Natasha McCarthy, Director of Policy, Data, Royal Society.
18:45	Introduction to DISCnet, Professor Seb Oliver, DISCnet Director
18:55	Working with DISCnet through placements, DISCnet industrial partners and DISCnet students
19:15	Introduction to networking session
	Marble Hall
19:20	Networking

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WELCOME
FROM THE DIRECTOR OF DISCnet

Welcome to the inaugural DISCnet Showcase.

Data intensive science has a huge and rapidly growing potential to influence the economic and societal health and wealth of the UK and wider world. With expertise in handling large volumes, complexities and rates of data to address real questions, DISCnet has a huge amount to offer its industrial partners.

DISCnet is a Centre for Doctoral Training providing a platform for developing a new generation of postgraduate data-intensive scientists. It capitalises on existing long-term collaborative and business engagement experiences through the South East Physics Network, and exploits the established interdisciplinary links between five leading UK universities: the Universities of Southampton, Sussex, Portsmouth, Queen Mary University of London, and the Open University.

Our students are being trained in the skills required for the rapidly growing data economy, including programming, big data handling, data analytics, and the latest statistical and machine learning techniques underpinning artificial intelligence. These skills are being honed on some of the most challenging big data science questions in particle physics and astrophysics.

It is our hope that this evening will highlight the ways in which business and industry can collaborate and benefit from links with DISCnet, and provide you with the opportunity to meet our talented students.

Professor Seb Oliver,
Director, DISCnet, University of Sussex

OUR PLACEMENT SCHEME

Integral to our PhD programme, the placement scheme requires all our students to complete at least six months in industry working on real-life data science projects, applying the skills learned through their research and our residential data science training courses. The students gain valuable industry insight and our partners benefit from having a highly-skilled and dedicated member of staff, who can work intensively on a particular data project or problem for a set period of time.

In our first round of placements during 2018, our students have already been able to make an impact at their host employers across a range of sectors including health, finance and technology.

We start looking for placement providers in December and January ahead of a competitive selection process that matches students with employers, to ensure best fit for both parties. Our placements typically take place for three months over the summer, though this is flexible according to the needs of both student and provider.

Over the following pages you will hear from some of our placement hosts from 2018; their experiences and reasons for working with DISCnet, and the highlights of hosting our students.

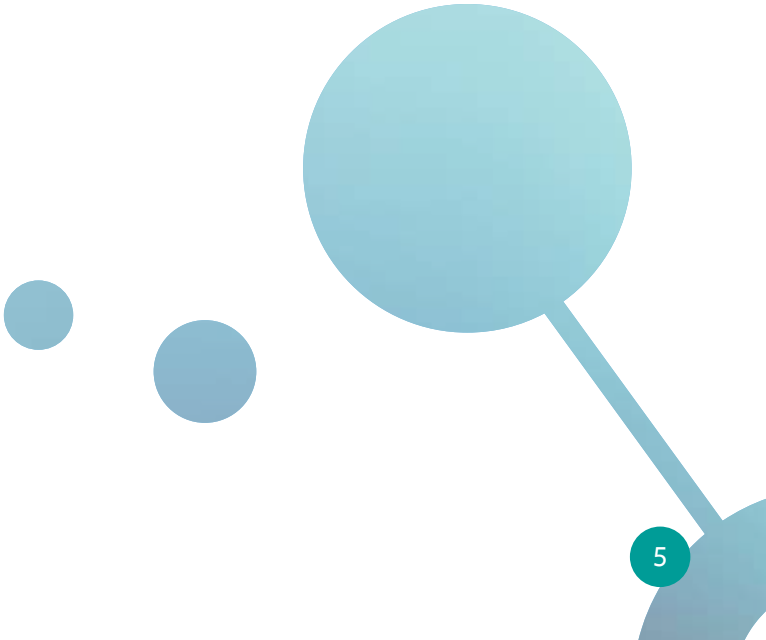
PLACEMENT PROVIDERS

AIMS, South Africa

The quality of applications we received from candidates were excellent and demonstrated strong problem-solving skills and the ability to rapidly grasp complex topics. Hosting a placement student allowed us to explore niche topics that we would not have been able to otherwise and this has been of benefit to the company. We also like to have links with universities and enjoy working with and mentoring young people.

Quant Foundry

Our DISCnet placement student continuously demonstrated the skills and expertise needed to be a good Quantitative Analyst & Model Developer and met all expectations for the delivery items on the project. The work performed in addressing the challenges we face in our industry has significantly accelerated our research program to the point that we have been able to approach clients on models we developed in parallel. It's clear that as a business accelerator, the DISCnet programme has been a success for us.



PLACEMENT PROVIDERS

Deckchair

DISCnet's placement of a student means Deckchair now benefit from an AI method for automatically identifying striking images from their global network of Livecam technologies. Deckchair's Livecam technology provides live views and time-lapse videos of their clients' destinations in over 44 countries, ranging from hotels in the Arctic circle to cruise ships in the Atlantic.

Incredible images are highly valued in order to promote their clients' locations. However, finding these is a time-consuming human process for Deckchair. Working with Calypsort, a spinout from particle physics research at University of Sussex, our student developed an AI workflow to solve this automatically.

Brighton and Hove City Council

In the summer five children get lost on Brighton beach every day. This causes distress to the children, their families, risk of harm to children and a significant case load for Brighton and Hove City council staff in the seafront office.

During a DISCnet placement our student provided a proof of concept that machine learning, using convolutional neural networks, applied to drone images of crowded beaches, could identify a lost child. This has provided Brighton and Hove City Council with the incentive to explore this concept fully.

OUR STUDENTS

During the networking session this evening you will have the opportunity to meet our students, some of whom we have profiled here. Our postgraduate researchers are not only talented data scientists, but also excellent physicists, and it is through their physics research projects that their data science abilities are developed and sharpened. We have included their research themes to demonstrate how wide-ranging their skillsets are, and we hope that you will be inspired to speak with as many of them as possible over the course of the evening.

Callum Boocock, Queen Mary University of London

Background: Callum graduated with an MSci in Mathematics and Physics from Durham University in 2013. For his Master's project he carried out an experimental study of high-temperature superconductors. Before starting his PhD, he worked in the nuclear sector for a number of years and he now studies plasma physics as part of his PhD.

Research project: Solar Coronal Active Region Dynamics 3D Modelling.

Callum models the solar corona using resistive magnetohydrodynamics (MHD) equations, specifically looking at the dissipation of magnetic energy through MHD waves as a possible mechanism for the non-thermal energy transport from the photosphere to the corona. This is achieved by running large-scale simulations using both local and higher-tier high-performance computing facilities.

Lisa Kelsey, University of Southampton

Background: Lisa graduated with a BSc in Physics from the University of Surrey in 2015, worked in scientific outreach at the Royal Observatory Greenwich, and then graduated from University College London with a Distinction in MSc Astrophysics in 2017.

Research project: The Host Galaxies and Local Properties of Type Ia Supernovae in the Dark Energy Survey.

Lisa's research focuses on the host galaxies and local properties of type Ia supernovae, used in cosmology as distance indicators, to understand how the host galaxies affect the nature and luminosity of the supernova explosion. This will lead to improved constraints on cosmological parameters, such as the dark energy content of the universe.

Joe Davies, Queen Mary University of London

Background: Joe graduated from Queen Mary with an MSci in Theoretical Physics in 2018, and then spent two months working at the Royal Astronomical Society as an Assistant Editorial Intern.

Research project: Searching for Dark Matter at the ATLAS Detector using Machine Learning.

Joe studies dark matter, an elusive substance as it tends not to react with 'ordinary' matter. Joe uses sophisticated computer programs that will be able to pick out the after-effects of dark matter production at the ATLAS detector at the Large Hadron Collider at CERN.

Jesal Mandalia, Queen Mary University of London

Background: Jesal graduated with an MSci in Physics from Queen Mary. Jesal's MSci project researched high-energy neutrinos at the Japanese experiment Hyper-Kamiokande, providing her with the experience to gain a summer student placement at CERN. Her project at CERN was developing a physics analysis for one of the prototypes for the Deep Underground Neutrino Experiment (DUNE).

Research project: Measurement of the Process of W Production with Off-Shell W Bosons in the ATLAS Detector.

At the Large Hadron Collider, production of off-shell W bosons at large momentum transfer is sensitive to new physics, and proton structure. Precision measurements of the Drell-Yan process in neutral and charged current channels will help to constrain the proton Parton Distribution Functions, will allow model-independent effective field theory coefficients to be extracted, and will allow a measurement of the width of the W Boson.

Meirin Oan Evans, University of Sussex

Background: Meirin graduated from the University of Manchester with an MPhys in 2018. His Master's project title was "Enabling Open Science with the ATLAS Open Data project at CERN", an education and outreach programme aiming to make Large Hadron Collider data accessible to undergraduate university students.

Research project: Measurement of the ttW and ttZ Differential Cross-Sections in Proton-Proton Collisions at 13 TeV with the ATLAS Detector.

Meirin works on understanding the production of pairs of top quarks (t), the heaviest known fundamental particles, along with W or Z bosons (there exist other bosons apart from the Higgs!) which is a very rare process at the Large Hadron Collider. Measuring the probability of this process with respect to other quantities will be sensitive to 'New' or 'Beyond the Standard Model Physics' at the high energies probed in this experiment.

Megan Brown, Open University

Background: Megan graduated from Lancaster University in 2018 with an MSci in Natural Sciences, having spent her third year studying abroad in Canada. The degree focused on chemistry, statistics and the environment, with a dissertation examining trends and variations in ozone pollution over Europe.

Research project: The Distribution and Variation of Ozone on Mars.

Nadir and Occultation Mars Discovery (NOMAD) is an instrument aboard the ExoMars Trace Gas Orbiter, launched in 2016. One of its objectives is to map trace gases in the atmosphere, such as ozone and HOx species through Nadir observations (looking directly down at the planet's surface) and solar occultations (looking at the sun through Mars' atmosphere). The project aims to retrieve the data and study the temporal and spatial variation of ozone to better understand Mars' atmosphere.

Michael Soughton, University of Sussex

Background: Michael graduated with an MPhys (Research Placement) from the University of Sussex in 2018. During his undergraduate degree, Michael undertook three research placement projects - one in modelling galaxy formation rates, and two on producing a supernova trigger for the Deep Underground Neutrino Experiment. Michael is keen to participate in outreach programmes aimed at widening enthusiasm for science, and continues to seek opportunities to do so while studying for his PhD.

Research project: Searching for Fundamental Theories of Nature with Unsupervised Machine Learning.

Michael's project seeks to understand the failings of current fundamental theories within physics to predict results such as 1) the existence of dark matter, 2) Baryon asymmetry, and 3) the existence of a light Higgs particle. He will attempt to implement an unsupervised machine learning algorithm to predict a model that explains these features. This will involve using methods such as Bayesian analysis to model data from the Large Hadron Collider, dark matter experiments and cosmic microwave background measurements. This strategy has the potential to open a new avenue of research in high-energy physics.

Heidi Thiemann, Open University

Background: Heidi graduated with an MPhys in Physics with Space Science and Technology from the University of Leicester. She started a PhD in Astronomy at the Open University in 2017, and is currently researching binary star systems.

Research project: Variable Stars in the SuperWASP All Sky Survey.

SuperWASP is the most successful ground-based survey for transiting exoplanets. SuperWASP data can also be used for investigating variable stars, and the archive contains light curves of up to one million objects. We have identified 15,799 objects in a cross-correlation between the SuperWASP and XMM-Newton X-ray catalogues, including rotational variables, eclipsing binaries, and pulsators. We are using this cross-correlation to complete the largest study of the rotation-activity relation, and to investigate individual stellar objects.

Norman Khan, University of Southampton

Background: Norman graduated in 2018 with a Master's in Physics and Astronomy from the University of Southampton. He is now undertaking a PhD in Astronomy studying ultra-luminous X-ray sources.

Research project: Ultra-luminous X-ray sources hosting either black holes or neutron stars are astronomical physics laboratories sampling extreme conditions. These allow us to investigate exquisitely sensitive measurements of quantities such as the power of gravitational radiation.

Arran Freegard, University of Southampton and Queen Mary University of London

Background: Arran completed his Master of Physics degree in 2018 at the University of Southampton, with an MPhys project examining the detection of 'standard model' signatures at the Large Hadron Collider. Arran also has experience working as a research intern on dark matter detection.

Research project: Combined Higher-Order Quantum Chromo-Dynamics and Electro-Weak Corrections for High-Energy V+jets (V=W,Z) Production at the Large Hadron Collider.

As the energy of particle colliders increases, the impacts of higher-order electro-weak corrections become important. As the strong coupling decreases faster than the electro-weak, squared logarithmic terms due to virtual and real W-emissions in higher-order contributions affect calculations. The project involves deploying higher-order scattering amplitudes for the production of electro-weak gauge bosons and jets within the standard model in a suitable tool for experimental analyses within ATLAS.

Edward Efui Salakpi, University of Sussex

Background: Edward has an academic background in Agricultural Science from the University of Ghana and an MSc in Information Systems (Data mining and Information systems architecture) from the University of Reading. In Ghana, he worked at the University of Ghana as a System Administrator for six years before joining the University of Sussex as a DARA Big Data PhD Research Fellow.

Research project: Forecasting the Onset of Vegetative Stress Associated with Drought in Pastoralists Communities Using Remote Sense Derived Vegetation Condition Index (VCI) as an Indicator.

The effect of drought on vegetation negatively impacts livestock and the livelihood of people in pastoral communities in Africa. This calls for the need to develop reliable early warning systems for disaster preparedness. For this PhD research, Edward will apply data-intensive techniques used in astronomy to Earth Observation datasets, to study pasture dynamics and build a model for forecasting the onset of vegetation stress using the VCI as an indicator.

Connor McIsaac, University of Portsmouth

Background: Connor graduated from the University of Glasgow with a MSci in Physics with Astrophysics in 2018. He spent summer 2017 in the Netherlands, at the European Space Agency, doing research in the field of extra-galactic astronomy.

Research project: Improving the Reach of Gravitational-Wave Astronomy.

Connor will be using gravitational-wave data from the Laser Interferometer Gravitational-Wave Observatory to observe signals from extremely massive and compact systems, such as binary black holes. These signals will be used to investigate their sources and test the interaction of gravity in some of the most extreme conditions in the observable universe.

Lewis Hill, University of Portsmouth

Background: Lewis graduated from the University of Surrey with a BSc in Physics with Astronomy. Between his second and third year at university he completed a one-year industrial placement at the Home Office Centre for Applied Science and Technology. This work involved the use of machine learning and novel techniques to detect contraband entering the UK.

Research project: Stellar Populations in Galaxies with the Large Galaxy Survey SDSS-IV/MaNGA.

This project will use data from the Mapping Nearby Galaxies project, part of the fourth generation Sloan Digital Sky Survey. This is a six-year campaign that uses optical fibres to target the nearest 10,000 galaxies. Using this data, galaxy properties such as the abundance of metal, the speed of rotation and stellar mass can be studied.

Aswin P Vijayan, University of Sussex

Background: Aswin completed his Bachelors at the National Institute of Technology, Calicut, India, in Engineering Physics, which focused on applied physics like semiconductor technologies, thin films and nanotechnology. He then did a Masters at the Universiteit Leiden, in Astronomy and Cosmology, where he became interested in structure formation in the early Universe, which is where his PhD research interests lie.

Research project: Simulations at the Epoch of Reionisation.

Aswin studies reionisation, the last phase transition in the Universe, where it underwent a transition from a neutral to an ionised state. This was triggered by the formation of the first galaxies. Now the properties of these galaxies define the subsequent population of galaxies formed in the Universe, thus a proper study of this phase is important. In order to understand the physics that goes on at these scales and interpret observational data, Aswin hopes to utilise simulations of galaxy formation to study this epoch.

Paula Sahd Soares, Queen Mary University of London

Background: Paula graduated from UCL with an Astrophysics MSci in 2018. For her Master's project, she used statistical tests to try and find a correlation between different galaxy properties. Paula worked at UCL over the summer of 2018 trying to reproduce the molecular gas mass function of the local universe using Bayesian statistics.

Research project: Cosmology Theory Meets Data - Modelling Non-Linear Scales for Dark Energy Experiments.

Upcoming large-scale surveys, such as Euclid and SKA, will probe the nature of dark energy to unprecedented levels. This project will tackle how to model the non-linear (small scale) behaviour of different dark energy models from these surveys, and narrow down what could be learned about this mysterious component. Modelling will involve Markov chain Monte Carlo techniques using high-performance computing facilities, as well as machine learning for estimating cosmological parameters.

Charlie Woodward, University of Southampton

Background: Charlie graduated from the University of Southampton with a BSc in Mathematics, and then completed his MSc in Applied Mathematics at Imperial College London.

Research project: Quantum Entanglement and Machine Learning.

Charlie's research involves aspects of string theory, gravitational physics and quantum field theory. His project involves the idea of holography, a concept relating gravitational theories to field theories in one less dimension. The aim is to explore these ideas and help establish the relationship they have to machine learning. This is extremely relevant in modern physics, with applications to quantum computing.

Reese Wilkinson, University of Sussex

Background: Reese graduated with an MPhys Theoretical Physics degree from the University of Sussex in 2017 and for the last three years has also worked as the Senior Data Scientist for Fat Fish Digital, working on in-house and client projects.

Research project: Applications of Machine Learning in Extragalactic Astronomy.

With increasing size in astronomical databases, and better, larger surveys, the ability of astronomers to classify objects by 'eyeballing' them is becoming untenable. The project aims to develop machine learning techniques to aid in analysis and classification of Galaxy Clusters in the XMM Cluster Survey.

Matthew Grayling, University of Southampton

Background: Matthew recently graduated with an MSci in Physics from Imperial College London. He has significant experience in technical consulting, assisting a large technology firm in a major acquisition during a summer internship with Deloitte, as well as working on two data-focused projects in the water industry with Tynemarch Systems.

Research project: The Next Generation of Supernova Surveys.

2019 will see the first operation of the Large Synoptic Survey Telescope (LSST), which is set to image the entire sky every few days and generate unprecedented amounts of data. This makes it essential to develop new techniques for automatic classification of large samples of supernovae (exploding stars). Matthew's project involves developing these using existing data with the aim of ultimately applying those to LSST data, helping us understand the fundamental nature of the universe.

Jakub Orwat-Kapola, University of Southampton

Background: Jakub completed his undergraduate studies at the University of Southampton in 2018, where he was awarded an MChem with Medicinal Sciences. In his final-year research project he explored the application of machine learning in drug development, for prediction of physical properties of molecules to streamline high-throughput screening assays.

Research project: Data Science and Machine Learning Applied to Problems at the Intersection of Observational Astronomy and the Industry.

During his PhD Jakub will work with a data intelligence scale-up HAL24K and develop innovative algorithms and deep neural nets to tackle the 'big data' problems faced by astronomers and modern companies alike. His focus will lie on the prediction of time-series behaviour and modelling of image time-series. Applications include the analysis of x-ray emissions to detect and classify black holes and neutron stars, real-time optimisation in the sectors of transportation, energy, freight and more.

María Campos, University of Sussex

Background: María finished her Masters in Astrophysics at Universidad de la Laguna (Tenerife, Spain) in 2017. She then undertook a six-month placement at RAL Space (STFC).

Research project: Galaxy Evolution - A Multicomponent Machine-Learning Model.

The main goal of the project is to understand the formation and evolution of galaxies by applying machine-learning techniques to a multi-wavelength database of galaxies within the Herschel Extragalactic Legacy Project.

By observing galaxies at various wavelengths, it is possible to obtain different information that allows a better understanding of how galaxies evolve. Given the great amount of data available, statistical techniques can then be used to build tools that will enable testing of the current theoretical galaxy evolution models.

Joshua Wilde, Open University

Background: Joshua graduated from Keele University with a BSc in 2017, then studied at the University of Leicester for an MSc as well as working on the international SEEDS project, which consisted of planning a mission to gather in-situ resources from the lunar surface.

Research project: Using Machine Learning to find Gravitationally-Lensed Quasars and Supernovae.

Gravitational lensing is when a large foreground object due to its gravity distorts the objects behind it, usually by either creating multiple images of the same object or by morphing the object into an arc. Since these features can be difficult for a human to recognise, an artificial neural network will be trained to recognise these features. This will enable the detection of a larger number of gravitational lensed objects such as quasars and supernovae.

Lorenzo Zanisi, University of Southampton

Background: Lorenzo completed his BSc in Physics with Astronomy (Hons) and MSc in Astronomy and Astrophysics (Hons) at "La Sapienza" University of Rome.

Research project: High Redshift Galaxies and their Descendants.

Lorenzo is working on theoretical and numerical models of galaxy formation and evolution. The goal of his project is to create accurate computer simulations that will shed light on how galaxies that were born just after the Big Bang have evolved until today. High performance computing tools are essential for this work; moreover the simulation output is so large it needs to be handled by means of big data analysis techniques. Furthermore, the use of machine learning will be critical in recognizing the evolutionary paths of galaxies and their visual appearance.

James Keeble, University of Surrey

Background: James graduated in July 2018 with an MPhys degree (1st Class with Honours) from the University of Surrey and started his PhD in Theoretical Nuclear Physics there in October 2018.

Research project: Machine Learning for Nuclear Structure and Reactions.

The nuclear many-body problem is an area within nuclear physics governing the interactions between three or more particles. The mathematics describing such systems involves the use of linear algebra, and with simulating heavier nuclei the system becomes too large to compute. Hence the use of computational methods from machine learning, which can take large data structures and find solutions, is desirable.

Mario Grandi, University of Sussex

Background: After graduating in 2017 with an MPhys in Physics with Astrophysics from the University of Sussex, Mario decided to stay and immediately start his PhD in particle physics. He collaborates with the ATLAS experiment from CERN in the search of SuperSymmetric particles. He is currently placed at CERN for a year as part of his training.

Research project: Search for Direct Stau Production in Events with two Hadronic Taus with the ATLAS Detector.

Mario collaborates with the ATLAS experiment to study the data collected by the ATLAS detector from high energy proton-proton collisions provided by the Large Hadron Collider, in the search for undiscovered particles predicted by the theory of SuperSymmetry. In particular he uses advanced data-intensive analysis techniques to analyse the large quantity of data provided by the ATLAS detector, to search for the supersymmetric tau in events with tau leptons that decay into hadrons.

Billy Ford, University of Southampton

Background: Billy is a second year DISCnet PhD student in particle physics. He completed his undergraduate studies in 2016 in Southampton, earning a first class MPhys degree, with a project specialising in the AdS/CFT correspondence. After a quick year out, he returned to begin his PhD. During 2018, he also completed a DISCnet summer internship with Neural Capital, a Guildford based investment management firm. He found this to be a great experience and enjoyed applying his newfound data science skills in a professional environment.

Research project: Improved Classification of b jets from Higgs Boson Signals at the Large Hadron Collider.

Billy is currently using High Energy Physics computational tools (such as MadGraph) to generate Monte Carlo data for Higgs decays, for theories beyond the standard model, such as the 2 Higgs Doublet Model.

Mario Spina, University of Sussex

Background: I graduated from University of Catania with a Master's Degree in 2016. Since September 2017 I have been enrolled as a PhD student at the University of Sussex, collaborating with the ATLAS experiment. I am currently spending one year at CERN as part of my training.

Research project: Soft b-tagging in Compressed 3rd-Generation Supersymmetry Scenarios.

I am looking at particles that could advance our understanding of Particle Physics, by analysing data collected by the ATLAS detector at CERN. The particular signature I am interested in consists of a pair of "beauty" hadrons together with the "absence" of an energetic deposit within the detector. This search is performed using advanced data-analysis techniques. To determine whether those particles exist, statistical analysis to compare the measurements and the theoretical estimations are performed.

Maria Vincenzi, University of Portsmouth.

Background: Maria received her Bachelor's degree in Physics from the University of Milan (Italy) in 2014. She then pursued a two-year Master's degree in Astrophysics from the same University. Before starting her PhD at the University of Portsmouth, she was employed for six months at the Lawrence Berkeley National Laboratory (Berkeley, CA) by the Supernova Factory Collaboration.

Research project: Bayesian Analysis of the Dark Energy Survey Photometric Supernova Sample.

Type Ia Supernovae are extremely bright objects, visible up to several billion light-years away and, since their absolute luminosity is well known, they make excellent distance indicators. For these reasons, they are one of the most important cosmological tools for accurately mapping the expansion history of the universe.

The Dark Energy Survey has detected thousands of supernovae and Maria is developing a machine learning classifier that identifies Type Ia supernova within the sample. This will be crucial to building a robust and unbiased statistical model of the expansion of our universe.

Brett Mayes, University of Sussex

Background: Brett graduated from his MPhys course at the University of Sussex and then moved straight on to studying a PhD in a similar field to his Master's project. He has carried out substantial outreach work and tutoring alongside his Masters, and plans to continue this.

Research project: Deep Learning Techniques to Search for Beyond-the-Standard-Model Physics in Neutrino Experiments.

Brett will be using artificial intelligence to analyse the data sets produced in the NOvA detector. This experiment looks to measure many properties about neutrinos, each of which is interesting in its own way. His aim is to use machine learning to improve the current analysis techniques and help to drive towards a new discovery.

Oleg Kozhura, Open University

Background: Oleg graduated from the University of Kent with an MPhys (Hons) Physics with Astrophysics in 2018. His Master's project was in theoretical physics with a title 'Collective effects in the pi-flux dice lattice model'.

Research project: Stellar Multiplicity, Eclipsing Binaries and PLATO Planets.

PLATO is a space observatory due to launch in 2026 to search for exoplanets via the transit method. This project involves investigating the effect of higher order stellar multiplicity on the population properties of eclipsing binary surveys and on exoplanet transit surveys. Therefore, existing code will be modified, and new code will be written to account for such systems. As a result of the project, a better understanding of population properties of stellar multiplicity will be obtained.

WORKING WITH US

If you have been inspired by what you have heard at today's showcase and would like to explore further the possibility of working with us, then there are a number of ways we can collaborate:

- Through our postgraduate placement scheme
- Through training collaborations to upskill and develop your staff
- Through 'hackathons' – focused bursts of effort from a team of PhD students working on a particular data-science challenge faced by your business.
- Through research collaborations. Our network includes many nationally and internationally-recognised researchers with the expertise to accelerate your R&D goals.

You can email: **discnet@soton.ac.uk**

Contact the Director, Professor Seb Oliver at:
s.oliver@sussex.ac.uk

Contact the Deputy Director, Professor Mark Sullivan at:
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Fill in the contact form found on our website:
www.discnet.org.uk/contact

Connect with us on Linkedin, **http://bit.ly/discnet-linkedin**

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