

Alejandro Santorum Varela

October 7, 2020

1 About You

1.1 Personal Details

Personal Details

Details captured within this section will be used to identify you with your application.

If you require a visa to study at the University of Cambridge, the details you provide below must match the corresponding details in your passport.

Further guidance

Title	Mr ▼	
First/Given name	Alejandro)
Last/Family name	Santorum Varela)
Middle name(s) (optional)		
Preferred name (optional)	G)
Have you applied previously to the University of Cambridge under a different name?	○ Yes ③ No)
Date of birth	23-Jan-1998 🗂	

1.2 Contact Details

Contact Details

Information captured within this section will be used to contact you. Most communications will be sent via email.

If these details change after submission of your application you must contact the Postgraduate Admissions Office so that they can update your records.

The email address shown is the address you used to register your account with; if you would prefer emails from the University to be sent to a different email address, please amend it below.

Further guidance

Primary phone number	+34 672779997	0
Secondary phone number (optional)		0
Skype address (optional)		0
Email address	alejandro.santorum@gmail.com Edit	

Contact address

Country	Spain ▼
County/Province	Pontevedra ▼
Contact address	Plaza de la marina
	no. 3 - 3 A
City	Lalín
(optional)	
Postcode (optional)	36500
(optional)	
Valid until (optional)	Õ
(optional)	

Home address

Is your home address the same as your	Yes ○ No	0
contact address?		

1.3 Nationality & Visa

Nationality & Visa

The information collected in this section is required to enable the appropriate assessment of the following:

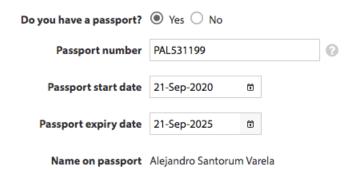
- Your fee liability (Home / Overseas)
- Your eligibility for funding competitions
- Your visa requirements (for international applicants)

It will not affect the academic assessment of your application; however, should you be recommended for admission, it will enable the Postgraduate Admissions Office to process your offer more quickly and for you to be considered for relevant funding.

Further guidance



Passport details





The name on your passport must match the name on your application. If not then please update your personal details.

Visa details

Do you currently hold a valid UK visa or immigration status?

1.4 Additional Information

Additional Information

The information collected on this page will not affect the academic assessment of your application; however, it is required for the following reasons:

- The gender information is collected for statutory returns, to ensure our equal opportunities policy is working, and to ensure that your
 application is sent to the appropriate colleges for consideration
- The family information is collected to enable the appropriate assessment of your financial liability, and your accommodation and other support requirements (if you are bringing family)

Further guidance

A	h	n	п	t	ν	n	
•	•	v	м		"	•	м

What is your gender?	Male ▼
Is this the same as your gender at birth? (optional)	Yes •
Your family	
Will you be bringing a partner or spouse?	○ Yes ③ No
Will you be bringing children?	○ Yes ● No

2 Course Application

2.1 Reference Request

In process...

2.2 Academic History

Academic History

Starting with the most recent, please provide details of any previous or current degree-level study and upload evidence of this study. This can be a transcript, certificate or enrolment letter (if you are currently studying). **Uploaded evidence should be in colour.**

If you have completed your study, your transcript/certificate must confirm that the degree has been awarded and the date of this.

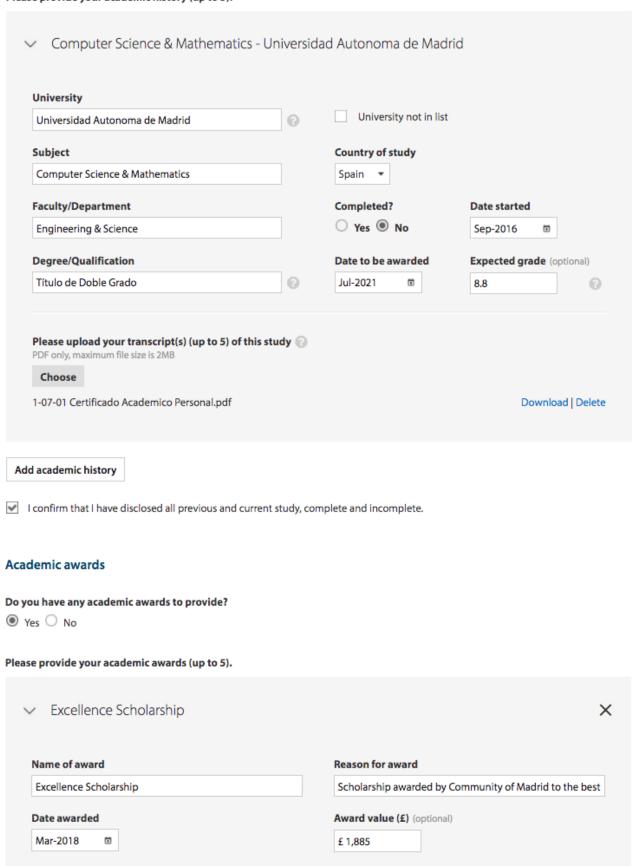
If the name of the institution or subject is too long for the text box, please abbreviate it as needed.

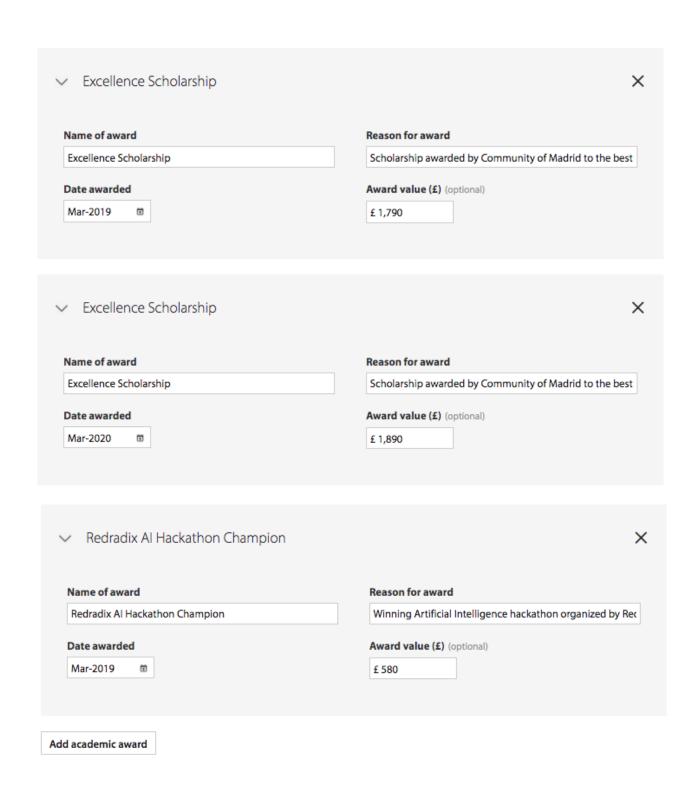
Academic Awards: If you have any prizes or academic distinctions that you feel may benefit your application, please indicate up to a maximum of five beneath your academic history.

Please note: If you select that you will be providing your academic documents at a later date, your application will not be forwarded to the department until the documents have been uploaded. Once the course deadline has passed, your application will be withdrawn if the outstanding documents have not been provided.

Further guidance

Please provide your academic history (up to 5).





2.3 Employment History

Employment History

Please provide details of any current or former employment history that you feel may benefit your application, including work experience, internships or volunteer work.

Further guidance

Do you have any relevant employment history?

O Yes

No

2.4 English Language

English Language

The University requires all applicants to demonstrate competence in the English language at a very high level **before** they begin their proposed course of study. Adherence to this requirement is strict, especially for candidates on one-year courses. Evidence of competence in the English language will be assessed at the point of offer and, if it is relevant, an English Language condition may be set.

Please read the further guidance for information on approved language tests, minimum scores, and the English Language requirement.

Further guidance

We understand that you are not a national of an English speaking country.

If you have already taken a language test, please provide your scores here.

PDF only, maximum file size is 2MB

Although you do not need to take the test before you apply, if you are made a conditional offer and have not already met our language requirements, one of the conditions of your offer will be that you pass a test at the required level. If you have neither taken an approved language test and achieved the minimum required score, nor recently studied for 3 years (ending within the last 2 years) at a level equivalent to a UK Bachelor degree in a list A country, then you should make arrangements to take a test as soon as possible as there can sometimes be long waiting times for a test place.

• • • • • • • • • • • • • • • • • • •	I have recently studied for 3 years (ending within the last 2 years) at a level equivalent to a UK Bachelor degree in a list A country. I have completed an approved language test and will provide the results below. I have taken/booked an approved language test and will provide the result when it is available. I am planning to book an approved language test and will provide the result when it is available. Other, please give information		
	Language test	Cambridge English Advanced ▼	
	Test date	Jun-2018 🛅	
	Reference no.	A6598280	0
	Grade	С	
	Language test result (optional)	CAE_certificate_compressed.pdf	Download Delete

2.5 College Membership

College Membership

The University of Cambridge is a collegiate university and all graduate students must become members of a College.

Your College preferences will not impact on the academic decision of admission, but should you be made a formal offer of admission, your application will be sent to these Colleges for consideration for membership. If the Colleges you have selected do not wish to offer you membership you will be allocated alternative College membership.

If you do not wish to select a College preference you will still be offered membership from one of the Cambridge Colleges if you receive an offer of admission.

Please note that you are not permitted to amend these preferences after the submission of your application.

For more information on College membership and how to choose your preferred Colleges, see the further guidance below.

Further guidance

College membership		
Are you already a member of a University of Cambridge College?	○ Yes ● No	0
College preference		
Do you wish to supply a preference for your College?		0
First College preference	Trinity College ▼	
Second College preference	Peterhouse •	

2.6 Other Information

Other Information

This section asks for further information in support of your application; this information will be considered by the department when assessing your application.

We also ask in this section how you heard about the course and, if you have submitted or intend to submit any other applications for future study, where and what have you applied for. This information assists us in correctly marketing and advertising our courses and does not affect the assessment of your application.

Further guidance

Career goals (approximately 200 words) By applying for this program I am pursuing my career goals. First, it is clear that I am looking forward to earning the Master of Philosophy in Machine Learning and Machine Intelligence certificate. It would boost both my technical experience and my communication skills to exhibit my thoughts effectively with the desire of becoming a machine learning expert. In addiction, once I finish my Master's studies, I intend to get a satisfactory job in a reputable company, benefiting both my personal growth and trying to make the lives of other people easier. Finally, I am looking forward to starting my own business in the future, because I consider myself capable of successfully carrying out a personal project with the aim of improving my skills as a leader and, at the same time, contributing new technologies and ideas to society that raise it as a whole.

Additional information to support application (optional, approx	kimately 200 words) 🕜		
1000 characters remaining.			
Hamidid you have about the course? (1)1)			
How did you hear about the course? (optional)			
Search Engine ▼			
Other applications			
Have you made any additional applications to the University o	of Cambridge or any other institutions?		
Yes No	cambridge or any other institutions:		
Please provide your other applications (up to 5).			
 MSc in Artificial Intelligence - University of Edinburgh 			
University	Faculty/Department (optional)		
University of Edinburgh	School of Informatics		
officers, or comparison	School of Informatics		
Country	Subject/Programme of study/research		
United Kingdom 💌	MSc in Artificial Intelligence		

Course Specific Questions

Course Specific Questions

Motivation for applying

Add other application

MPhil track

This will not affect the modules available to you.

Please indicate your likely area of primary 📝 Machine Learning Foundations

on the programme: Computer Vision and Robotics Multiple Choice

Multiple Choice

Speech and Language Technology

Please explain your motivation for applying for the course. (optional) As an undergraduate of joint bachelor's degree in Computer Science and Mathematics, this graduate program is magnificent toward achieving my goal of becoming an Artificial Intelligence expert.

In the undergraduate program at Autonomous University of Madrid, I was able to develop several skills that make me a strong candidate for your program such as advanced knowledge in calculus, linear algebra and statistics, as well as in probability, algorithm analysis and artificial intelligence. Moreover, it has also allowed me to instruct myself in the fundamentals of machine learning, neurocomputation and organizing a research project due to my two final degree dissertations in random matrix theory and machine learning. Finally, I have participated in various international machine learning hackathons, working together with a heterogeneous group of professionals.

I have chosen the mentioned program at University of Cambridge because it is the perfect next step to keep learning advanced data science, refine my presentation skills and to collaborative with PhD students and research assistants while carrying out a leading-edge research project.

Thank you for your time and consideration. Please do not hesitate to contact me if you have any questions or if there is any additional information I can provide.

¹⁷⁹ characters remaining.

Brief statement of relevant work experience

Please describe any work experience you have had relevant to the subject area of the programme, especially if more than one year has elapsed since you completed your most recent degree. (optional)

750 characters remaining.

Academic preparation (math)

Please list any relevant University-level courses you have taken in this area, and state items in or related to the following list that were covered in that course; differentiation; integration; vector calculus; ODEs/PDEs; Fourier series; vector gradients; coordinate systems. Please enter 'none' if you have not taken courses in this area. Courses must be verifiable on transcripts submitted with this application.

Academic preparation - calculus and university-level mathematics

-Calculus I: univariate differentiation and integration

- -Calculus II: vector calculus, gradients, coordinate systems, multivariate differentiation and integration
- -Analysis: multivariate differentiation, differentiable surfaces and manifolds, manifold integration
- -Differential Equations: ODEs, differentiation, integration
- -Complex Analysis I: complex differentiation and integration
- -Geometry of Curves & Surfaces: manifold integration
- -Integration & Measure Theory: Lebesgue integration

2 characters remaining.

Academic preparation (algebra)

Please list any relevant University-level courses you have taken in this area, and state items in or related to the following list that were covered in that course: vectors; matrices; linear transformations; matrix inversion; eigenvalues and eigenvectors; matrix factorization; SVD; least squares solutions. Please enter 'none' if you have not taken courses in this area. Courses must be verifiable on transcripts submitted with this application.

Academic preparation - linear - Linear Algebra; vectors, matrices, linear transformations, matrix inversion, eigenvalues algebra (optional) and eigenvectors, matrix factorization

-Linear Algebra & Geometry: vectors, matrices, linear transformations, matrix inversion, eigenvalues and eigenvectors, matrix factorization, conics and quadratics problems, affine geometry

-Numerical Analysis: matrix inversion, eigenvalues and eigenvectors, matrix factorization, SVD, PCA, least squares solutions

56 characters remaining.

Academic preparation (stat)

Please list any relevant University-level courses you have taken in this area, and state items in or related to the following list that were covered in that course: random variables; random processes; expectation; mean and variance; independence and conditional probability; law of large numbers; stationarity; correlation; Markov chains; central limit theorem. Please enter 'none' if you have not taken courses in this area. Courses must be verifiable on transcripts submitted with this application.

statistics

Academic preparation - probability and -Probability I and Probability II : random variables, expectation, mean and variance, independence and conditional probability, law of large numbers, correlation, central limit theorem

> -Statistics I and Statistics II: random variables, random vectors, expectation, mean and variance, independence and conditional probability, law of large numbers, correlation, central limit theorem

-Integration & Measure Theory: expectation

-Modelization: Markov chains, Stationarity

29 characters remaining.

Academic preparation (inference)

Please list any relevant University-level courses you have taken in this area, and state items in or related to the following list that were covered in that course: maximum likelihood and Bayesian estimation; regression; classification; clustering; Markov models and HiddenMarkov models; Monte Carlo. Please enter 'none' if you have not taken courses in this area. Courses must be verifiable on transcripts submitted with this application.

Academic preparation – inference | -Laboratory: Monte Carlo simulations

-Artificial Intelligence: maximum likelihood and Bayesian estimation, regression;

classification, clustering

-Modelization: Markov models

-Fundamentals of Machine Learning: maximum likelihood and Bayesian estimation, regression; classification, clustering

205 characters remaining.

Academic preparation (info theory)

Please list any relevant University-level courses you have taken in this area, and state items in or related to the following list that were covered in that course: entropy; mutual information; Kullback-Leibler divergence; source and channel coding. Please enter 'none' if you have not taken courses in this area. Courses must be verifiable on transcripts submitted with this application.

Academic preparation – information theory

-Artificial Intelligence: entropy

-Cryptography and Coding Theory: mutual information, source and channel coding, Hamming codes, Golay codes, Reed-Muller codes, Shannon theorem

323 characters remaining.

Academic preparation (inference)

Please list any relevant University-level courses you have taken in this area, and state items in or related to the following list that were covered in that course: maximum likelihood and Bayesian estimation; regression; classification; clustering; Markov models and Hidden Markov models; Monte Carlo. Please enter 'none' if you have not taken courses in this area. Courses must be verifiable on transcripts submitted with this application.

Academic preparation – inference -Laboratory: Monte Carlo simulations

-Artificial Intelligence: maximum likelihood and Bayesian estimation, regression; classification, clustering

Modelization: Markov models

-Fundamentals of Machine Learning: maximum likelihood and Bayesian estimation, regression; classification, clustering

205 characters remaining.

Academic preparation (info theory)

Please list any relevant University-level courses you have taken in this area, and state items in or related to the following list that were covered in that course; entropy; mutual information; Kullback-Leibler divergence; source and channel coding. Please enter 'none' if you have not taken courses in this area. Courses must be verifiable on transcripts submitted with this application.

Academic preparation - information theory

-Artificial Intelligence: entropy

-Cryptography and Coding Theory: mutual information, source and channel coding, Hamming codes, Golay codes, Reed-Muller codes, Shannon theorem

323 characters remaining.

Academic preparation (comp)

Please list any relevant University-level courses you have taken in this area, and state items in or related to the following list that were covered in that course: programming languages; algorithms; data structures; complexity; computing course work; project experience. Please enter 'none' if you have not taken courses in this area. Courses must be verifiable on transcripts submitted with this application.

Academic preparation – computing

- -Programming I & Programming II: programming languages (C/C++), algorithms, data structures
- -Programming Project: computing course work, project experience
- Data Structures: data structures
- Analysis of Algorithms: algorithms, complexity
- -Software Analysis & Design: programming languages (Java)
- -Software Analysis & Design Project: computing course work, project experience
- -Computer Systems I & Computer Systems II: programming languages (Python3), data structures, computing course work

4 characters remaining

Academic preparation (project title)

Please give the title of any major coursework, internship project, honours or master's thesis topic in an area relevant to the MLMI MPhil programme.

Academic preparation – title of relevant major project

-Mathematics Final Degree Dissertation: project about Random Matrix Theory, focused on Wishart distribution, Wigner's semicircle law and Tracy-Widom law.

- -Computer Science Final Degree Dissertation: project focused on the field of machine learning, studying stochastic processes and using RMT to estimate covariance matrices. -College Merits: Artificial Intelligence, Probability I and II, Computer Systems II,
- Communication Networks I and II, Microprocesors & Fundamentals of Computing

11 characters remaining.

Summary of Available Marks

Please state your overall mark for each year of all current and previous degree programmes. Please also state your overall mark for each programme, if available. Although this information will also be available on transcripts, stating it here will help us to process your

Summary of Available Marks | Year 1 overall mark; 8.69; Year 2 overall mark; 8.7; Year 3 overall mark; 8.65; Year 4 overall

SUMMARY OF AVAILABLE MARKS: Year 1 overall mark: 8.69; Year 2 overall mark: 8.7; Year 3 overall mark: 8.65; Year 4 overall mark: 8.98; Mathematics degree overall mark: 8.48; Computer Science degree overall mark: 9.03; Joint degree overall mark: 8.75 (on a 10-scale system)

3 **Funding**

3.1 How to Apply for Funding

How to Apply for Funding

If you wish to apply for funding for your course please select the box below and submit this application before the appropriate funding deadline. By selecting this box you will be automatically put forward for consideration by the main funding schemes across the University.

If you have other arrangements to fund your course (other sponsor etc) and do not wish to be considered for funding by the University then select that you do not wish to apply for funding. Please note that whichever option you select cannot be changed once submitted, so please check you have selected the right option. If in doubt, select apply for funding.

Full information on each scheme can be found on the web pages below:

- Cambridge Trust
- Research Council
- Harding Distinguished Postgraduate Scholars Programme
- Gates Cambridge

Other funding schemes may have additional information requirements or require a separate application form. See the Student Funding Search for further information on these schemes.

For all schemes <u>please ensure you apply BEFORE the appropriate</u> funding deadline.

Further guidance

Do you wish to apply for funding?

Applying for funding does not affect the academic decision to admit you to the course. Apply for funding now, if you answer no, this decision cannot be changed after you have submitted your application.

Yes - I wish to apply for funding
No - I do not wish to apply for funding

3.2 Cambridge Trust

Cambridge Trust

The Cambridge Trust provides a wide range of scholarships with varying conditions of eligibility, which include academic as well as financial need for different awards. All applicants are eligible.



All applicants are eligible and automatically considered.

Cambridge Trust statement

You will automatically be considered by the Trust for any awards for which you are eligible. If, after using the Cambridge Trust Scholarships search, you find any awards for which you consider yourself particularly eligible, please mention them here and give the reasons why you consider yourself eligible. (max 3,000 characters, approximately 500 words)

I do not consider myself eligible for any extra award.

I just consider myself eligible for the awards that I am automatically considered when I apply for postgraduate study, in this case, Master of Philosophy in Machine Learning and Machine Intelligence

2744 characters remaining.

3.3 Research Councils

Research Council Funding

 $Information\ about\ Research\ Council\ Funding\ can\ be\ accessed\ at\ Funding\ opportunities\ page\ and\ eligibility\ can\ also\ be\ checked\ using\ the\ link\ to\ also\ al$ each individual Research Council below.

To apply for funding from:

- Engineering and Physical Sciences Research Council (EPSRC),
- Economic and Social Research Council (ESRC),
 Science and Technology Facilities Council (STFC)

You will automatically be considered by submitting this application form by your funding deadline and selecting 'Yes' to the funding question on the How to Apply for Funding page. No further action is required.

To apply for funding from:

- Medical Research Council (MRC),
- Natural Environment Research Council (NERC)

Refer to the appropriate website in the links above

Studentships

Studentships are advertised through the following link: https://www.postgraduate.study.cam.ac.uk/courses/funded-research-projects

If you are interested in a particular studentship, please insert your desired project number(s) and project title(s) in the box below.

//	

1000 characters remaining

3.4 Gates Cambridge

Gates Cambridge

Citizens of countries other than the UK can apply for a Gates Cambridge Scholarship to pursue a full-time postgraduate degree in any subject available at the University of Cambridge. To be considered applicants must be eligible, complete the questions below and be nominated by the academic department in Cambridge to which they are applying. For full details see our website.

Do you wish to be considered for a Gates Cambridge Scholarship? Yes No You have confirmed that you do not wish to be considered for a Gates Cambridge Scholarship. This decision cannot be changed after you submit your application.

3.5 Your Funding

Your Funding

Please add in details of any funding you have applied for or secured. Do not include any Cambridge funding you will apply for using this form. Do not include details of any funding that you intend to apply for in the future.

The information collected on this page will be accessible to internal Funding Bodies, Colleges and your Faculty or Department, and may be used by them, to support the administration of funding packages. Ensuring that they have full information regarding your funding situation will support this administrative process.

Have you applied for or secured funding for this course that is in addition to the funding listed in this form and the Student Funding search?

Such as funding via an industrial partner, an MRC studentship, an externally funded scholarship etc.

○ Yes ● No

4 Equal Opportunities

4.1 Equal Opportunity

Equal Opportunity

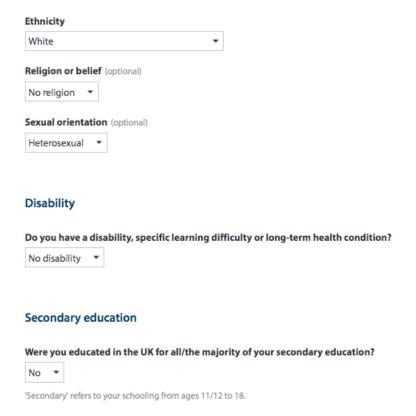
The University of Cambridge is committed to equality of opportunity and to a pro-active and inclusive approach to equality, which supports and encourages all under-represented groups, promotes an inclusive culture, and values diversity.

We recognise that these are sensitive questions, but hope you will feel able to provide this information to enable Cambridge to meet our statutory obligations, and assess the impact of our policies and practices on people from different equality groups and so that we can put in place appropriate provision and support for all students.

The disability information you provide also enables us to assess what additional support you may require. We invite you to disclose any disability so that you can be put in contact with the Disability Resource Centre who will establish what support, if any, is required to enable you to study effectively. Under the Equality Act 2010 a disability is any physical or mental impairment which has a substantial and long term adverse effect on an individual's ability to carry out normal day-to-day activities.

Information collected in this section will be used for anonymous statistical reporting to assess the realisation of our Equal Opportunities Policy and for the Higher Education Statistics Agency (HESA) annual reports. The data provided is not used in the academic decision to admit you to the course. Your personal information will be treated in accordance with the General Data Protection Regulation (GDPR) and related UK data protection legislation. Full details are set out in the University's Data Protection Policy

Further guidance



4.2 Adjustments

Adjustments

If you have a disability, we welcome your application and we will treat you fairly.

You may be invited for an interview, either in person, or via a video chat or voice call service. If you would like to tell us about any adjustments you may need to help enable us to treat you fairly, please let us know here (e.g. if you are a wheelchair user).

Completing this section will not affect the academic decision to admit you to the course.

Further guidance

Do you require any adjustments to the interview process?

Yes No

5 Documents & Submit

5.1 Documents

Supporting Documents

Computer Science & Mathematics - Universidad Autonoma de Madrid (Sep-2016/Jul-2021)

Please upload your transcript(s) (up to 5) of this study

PDF only, maximum file size is 2MB

Choose

1-07-01 Certificado Academico Personal.pdf

Download | Delete

Curriculum Vitae

Please upload your CV

PDF only, maximum file size is 2MB

 $Alejandro Santorum_CV.pdf$

Download | Delete

Cambridge English Advanced (CAE) - C

Please upload your language test result (optional)

PDF only, maximum file size is 2MB

 ${\sf CAE_certificate_compressed.pdf}$

Download | Delete