



**An Roinn Tithíochta,
Rialtais Áitiúil agus Oidhreacht**
Department of Housing,
Local Government and Heritage



Candidate Information Booklet

Open competition for the appointment to the position of
Postdoctoral Researcher:
Fog Forecasting for Irish Airports Using Machine Learning Methods
(Fixed term Contract)

Department of Housing, Local Government and Heritage
Met Éireann

Closing Date: Thursday 22nd July 2021 at 2pm

Please read carefully

Title of Position	Postdoctoral Researcher – Fog Forecasting for Irish Airports Using Machine Learning Methods
Department	Housing, Local Government and Heritage
Division	Met Éireann
Location	Met Éireann HQ, Glasnevin Hill, Dublin 9
Tenure	Fixed term contract – 2 years

Introduction

Met Éireann, Ireland's National Meteorological Service, provides a range of services to help protect life and property and promote societal and economic wellbeing.

Met Éireann operates in a fast-changing business environment, where science and technology are transforming the way meteorological services are delivered. There is a growing demand from end-users for high-quality, localised services tailored to their specific needs. These developments call for a renewed emphasis on scientific quality, and an organisational re-orientation towards greater innovation, flexibility and excellent customer service. Meeting these scientific and organisational challenges will be a key element in determining Met Éireann's strategic direction for the coming years.

Job Description

Met Éireann is seeking to hire a postdoctoral researcher that will focus on developing a fog forecasting product to improve provision of aeronautical meteorological services by enhancing the fog forecasting capability.

The successful candidate will use readily available Irish historical data from Irish airports to develop a machine learning model that generates probabilistic predictions of visibility. The appointed researcher will investigate the available machine learning methods and select those that are best suited for this study.

Responsibilities will include establishing new models, testing various specifications and configurations of machine learning algorithms and model validation. Validation will include cross-validation of models as well as validation against operational forecasts. Models may be extended

to include additional observational data, datasets (e.g. MÉRA) and HARMONIE-AROME output parameters.

Principal Duties

Principal duties include but may not be limited to:

- Analysis and manipulation of the observational data sets and HARMONIE-AROME model output.
- Development of fog forecasting models using various machine learning methods.
- Testing various specifications and configurations of the machine learning algorithms chosen.
- Liaise with aviation forecasters to produce and maintain a catalogue of forecasted and non-forecasted fog events at Irish Airports.
- Cross-validation of models and model validation against observations and operational forecasts.

Working Environment

The successful candidate will be required to work principally in Met Éireann HQ, Glasnevin Hill, Dublin 9.

Educational, professional or technical qualifications, knowledge, skills, aptitudes, experience, training

a) ESSENTIAL for the job

1. Experience in Machine Learning modelling
2. A Ph.D. or equivalent experience in atmospheric sciences, physics, mathematics, data and computer science or a related discipline is required. Applicants who expect to receive a Ph.D. in 2021 will also be considered.
3. Strong quantitative skills including data analysis.
4. Strong programming skills.
5. Effective oral and written communication skills.

b) **DESIRABLE (but not essential) for the job**

1. Experience in handling scientific data.
2. Evidence of creativity and capability of independent research.

ELIGIBILITY TO APPLY AND CERTAIN RESTRICTIONS ON ELIGIBILITY

Eligibility to compete and certain restrictions on eligibility

Candidates should note that eligibility to compete is only open to citizens of the European Economic Area (EEA). The EEA consists of the Member States of the European Union along with Iceland, Liechtenstein and Norway.

Incentivised Scheme for Early Retirement (ISER)

It is a condition of the Incentivised Scheme for Early Retirement (ISER) as set out in Department of Finance Circular 12/09 that retirees, under that Scheme, are debarred from applying for another position in the same employment or the same sector. Therefore, such retirees may not apply for this position.

Department of Health and Children Circular (7/2010)

The Department of Health Circular 7/2010 dated 1 November 2010 introduced a Targeted Voluntary Early Retirement (VER) Scheme and Voluntary Redundancy Schemes (VRS). It is a condition of the VER scheme that persons availing of the scheme will not be eligible for re-employment in the public health sector or in the wider public service or in a body wholly or mainly funded from public moneys. The same prohibition on re-employment applies under the VRS, except that the prohibition is for a period of 7 years, after which time any re-employment will require the approval of the Minister for Public Expenditure and Reform. People who availed of either of these schemes are not eligible to compete in this competition.

Collective Agreement: Redundancy Payments to Public Servants

The Department of Public Expenditure and Reform letter dated 28th June 2012 to Personnel Officers introduced, with effect from 1st June 2012, a Collective Agreement which had been reached between the Department of Public Expenditure and Reform and the Public Services Committee of the ICTU in relation to ex-gratia Redundancy Payments to Public Servants. It is a condition of the Collective Agreement that persons availing of the agreement will not be eligible for re-employment in the public service by any public service body (as defined by the Financial Emergency Measures in the Public Interest Acts 2009 – 2011) for a period of 2 years from termination of the employment. Thereafter the consent of the Minister for Public Expenditure and Reform will be required prior to re-employment. People who availed of this scheme and who may be successful in this competition will have to prove their eligibility (expiry of period of non-eligibility) and the Minister's consent will have to be secured prior to employment by any public service body.

Declaration

Applicants will be required to declare whether they have previously availed of a public service scheme of incentivised early retirement and/or the collective agreement outlined above. Applicants will also be required to declare any entitlements to a Public Service pension benefit (in payment or preserved) from any other Public Service employment and/or where they have received a payment-in-lieu in respect of service in any Public Service employment.

Principal Conditions of Service

General:

The appointment is subject to the Civil Service Regulations Acts 1956 to 2005 and the Public Service Management (Recruitment and Appointments) Act 2004 and any other Act for the time being in force relating to the Civil Service.

Pay: On appointment €40,854.00 per annum, after 1 year €42,525 year per annum.

Important Note

Payment will be made fortnightly in arrears by Electronic Fund Transfer (EFT) into a bank account of an officer's choice. Payment cannot be made until a BIC code and IBAN number and bank sort code has been supplied to the Personnel Section of the relevant Department or Office. Statutory deductions from salary will be made as appropriate by the Department/Office.

An officer will agree that any overpayment of salary or of travel and subsistence may be deducted from future salary payments due to an officer in accordance with the Payment of Wages Act 1991. In accordance with that Act, the Department/Office will advise the officer in writing of the amount and details of such overpayment and give at least one week's notice of the deduction to take place and will deduct the overpayment, at an amount that is fair and reasonable having regard to all the circumstances, within six months of such notice in accordance with the Act.

Tenure and probation:

The appointment is to a **temporary** unestablished position in the civil service for a period of 2 years.

The appointee will be required to serve a 6 month probationary period.

During the period of the probationary contract, an officer's performance will be subject to review by the appropriate supervisor(s) to determine whether the officer:

- I. has performed in a satisfactory manner
- II. has been satisfactory in general conduct, and
- III. is suitable from the viewpoint of health with particular regard to sick leave.

Prior to completion of the probationary contract a decision will be made as to whether or not the officer will be retained pursuant to *Section 5A(2) Civil Service Regulation Acts 1956-2005*. This decision will be based on the officer's performance assessed against the criteria set out in (i) to (iii) above. The detail of the probationary process will be explained to the officer by the Department/Office. A copy of Department of Finance guidelines on probation will also be made available to the officer.

Where an officer is an existing civil servant and is not considered as suitable to the position having been assessed against stated criteria, the officer will be notified in writing of the action to be taken prior to the expiry of the probationary contract and any extensions thereof.

Notwithstanding the preceding paragraphs in this section, the probationary contract may be terminated at any time prior to the expiry of the term of the contract by either side in accordance with the Minimum Notice and Terms of Employment Acts, 1973 to 2005.

In certain circumstances the contract may be extended and the probation period suspended. The extension must be agreed by both parties.

- The probationary period stands suspended where an employee is absent due to Maternity or Adoptive Leave
- In relation to an employee absent on Parental Leave or Carers Leave, the employer may require probation to be suspended if the absence is not considered to be consistent with a continuation of the probation
- Probation may be suspended in cases such as absence due to a non-recurring illness.

The employee may in these circumstances make application to the employer for an extension to the contract period.

Unfair Dismissals Act 1977 - 2005:

The Unfair Dismissals Acts 1977-2005 will not apply to the termination of this employment by reason only of the expiry of this probationary contract without it being renewed.

Duties:

The officer will be required to perform any duties appropriate to the position which may be assigned from time to time. The position is full time and the officer may not engage in private practice or be connected with any outside business which would interfere with the performance of official duties.

Headquarters:

The officer's headquarters will be such as may be designated from time to time by the Director. When absent from home and headquarters on duty appropriate travelling expenses and subsistence allowances will be paid, subject to the normal civil service regulations and the guidelines of Department of the Housing, Local Government and Heritage.

Hours of attendance:

Hours of attendance will be as fixed from time to time but will amount, on average, to not less than 43 hours and 15 minutes gross or 37 hours net of lunch breaks. Flexibility may be required with regard to extra attendance from time to time. The rate of remuneration payable for any exceptional extra attendance will be in line with Department of Public Expenditure and Reform circulars.

Annual Leave

On recruitment, annual leave will be 25 working days a year. This allowance, which is subject to the usual conditions regarding the granting of annual leave, is on the basis of a five-day week and is exclusive of the usual public holidays

The Organisation of Working Time Act:

The terms of the organisation of Working Time Act, 1997 will apply, where appropriate, to this employment.

Sick Leave:

Pay during properly certified sick absence, provided there is no evidence of permanent disability for service, will apply on a pro-rata basis, in accordance with the provisions of the sick leave circulars as amended from time to time.

Officers, who will be paying the Class A rate of PRSI, will be required to sign a mandate authorising the Department of Social Protection to pay any benefits due under the Social Welfare Acts direct to the Department of Housing, Planning and Local Government. Payment of salary during illness will be subject to the officer making the necessary claims for social insurance benefit to the Department of Social Protection within the required time limits.

Secrecy, confidentiality and standards of behaviours:

Official Secrecy and Integrity

During the term of the probationary contract, an officer will be subject to the Provisions of the Official Secrets Act, 1963, as amended by the Freedom of Information Acts 1997 and 2003. The officer will agree not to disclose to third parties any confidential information, especially information with commercial potential, either during or subsequent to the period of employment.

Civil Service Code of Standards and Behaviour

The officer will be subject to the Civil Service Code of Standards and Behaviour.

Ethics in Public Office Act 1995

The Ethics in Public Office Acts 1995 will apply, where appropriate, to this employment.

Prior approval of publications:

An officer will agree not to publish material related to his or her official duties without prior approval by the Secretary General of the Department.

Political activity:

During the term of employment the officer will be subject to the rules governing civil servants and politics.

Superannuation and Retirement

The successful candidate will be offered the appropriate superannuation terms and conditions as prevailing in the Civil Service, at the time of being offered an appointment. In general, and except for candidates who have worked in a pensionable (non-single scheme terms) public service job in the 26 weeks prior to appointment (see paragraph d below), this means being offered appointment based on membership of the Single Public Service Pension Scheme ("Single Scheme"). Key provisions attaching to membership of the Single Scheme are as follows:

a. Pensionable Age

The minimum age at which pension is payable is 66 (rising to 67 and 68) in line with State Pension age changes.

b. Retirement Age:

Scheme members must retire at the age of 70.

c. Pension Abatement

- If the appointee was previously employed in the Civil Service and is in receipt of a pension from the Civil Service normal abatement rules will apply. However, if the appointee was previously employed in the Civil Service and awarded a pension under voluntary early retirement arrangements (other than the Incentivised Scheme of Early Retirement (ISER) or the Department of Health Circular 7/2010 VER/VRS which, as indicated above, renders a person ineligible for the competition) the entitlement to that pension will cease with effect from the date of reappointment. Special arrangements will, however be made for the reckoning of previous service given by the appointee for the purpose of any future superannuation award for which the appointee may be eligible.
- If the appointee was previously employed in the Civil Service or in the Public Service please note that the Public Service Pensions (Single Scheme and Other Provisions) Act 2012 includes a provision which extends abatement of pension for all Civil and Public Servants who are re-employed where a Public Service pension is in payment. This provision to apply abatement across the wider public service came into effect on 1 November 2012. **This may have pension implications for any person appointed to this position who is currently in receipt of a Civil or Public Service pension or has a preserved Civil or Public Service pension which will come into payment during his/her employment in this position.**
- **Department of Education and Skills Early Retirement Scheme for Teachers Circular 102/2007**

The Department of Education and Skills introduced an Early Retirement Scheme for Teachers. It is a condition of the Early Retirement Scheme that with the exception of the situations set out in paragraphs 10.2 and 10.3 of the relevant circular documentation, and with those exceptions only, if a teacher accepts early retirement under **Strands 1, 2 or 3** of this scheme and is subsequently employed in any capacity in any area of the public sector, payment of pension to that person under the scheme **will immediately cease**. Pension payments will, however, be resumed on the ceasing of such employment or on the person's 60th birthday, whichever is the later, but on resumption, the pension will be based on the person's actual reckonable service as a teacher (i.e. the added years previously granted will not be taken into account in the calculation of the pension payment).

- **Ill-Health-Retirement**

Please note that where an individual has retired from a Civil/Public Service body on the grounds of ill-health his/her pension from that employment may be subject to review in accordance with the rules of ill-health retirement within the pension scheme of that employment.

d. Prior Public Servants

While the default pension terms, as set out in the preceding paragraphs, consist of Single Scheme membership, this may not apply to certain appointees. Full details of the conditions

governing whether or not a public servant is a Single Scheme member are given in the Public Service Pensions (Single Scheme and other Provisions) Act 2012. However the key exception case (in the context of this competition and generally) is that **a successful candidate who has worked in a pensionable (non-single scheme terms) capacity in the public service within 26 weeks of taking up appointment, would in general not become a member of the Single Scheme.** In this case such a candidate would instead be offered membership of the pension scheme for non-established civil servants ("Non-Established State Employee Scheme"). This would mean that the abatement provisions at (c) above would apply, and in addition there are implications in respect of pension accrual as outlined below:

e. Pension Accrual

A 40-year limit on total service that can be counted towards pension where a person has been a member of more than one existing public service pension scheme would apply. This 40-year limit, which is provided for in the Public Service Pensions (Single Scheme and other Provisions) Act 2012 came into effect on 28 July 2012. **This may have implications for any appointee who has acquired pension rights in a previous public service employment.**

f. Pension-Related Deduction

This appointment is subject to the pension-related deduction in accordance with the Financial Emergency Measure in the Public Interest Act 2009.

For further information in relation to the Single Public Service Pension Scheme for Public Servants please see the following website: <http://www.per.gov.ie/pensions>.

IMPORTANT NOTICE

The above represents the principal conditions of service and is not intended to be the comprehensive list of all terms and conditions of employment which will be set out in the employment contract to be agreed with the successful candidate.

Competition Process

The Department of Housing, Local Government and Heritage is recruiting for this position under its Recruitment Licence issued by the Commission for Public Service Appointments (CPSA) and in accordance with the CPSA's Code of Practice.

How to Apply

Applicants should submit a completed application form to recruitment@met.ie before Thursday 22nd July 2021 at 2pm.

The Application Form allows applicants to detail their qualifications, skills and experience and provide a personal statement outlining why they should be considered for the post and how they meet the essential requirements and personal attributes of the post.

Please note: Only applications submitted on the official application form will be considered. The application form is available on Met Éireann's website www.met.ie/about-us/vacancies.

Closing Date

The closing date for receipt of applications is Thursday 22nd July 2021 at 2pm.

All applications will be acknowledged. If you do not receive an acknowledgement within 3 days of applying please email recruitment@met.ie.

Essential Requirements and Personal Attributes

Candidates will be required to possess all the essential requirements and personal attributes required for the position. They will be requested to demonstrate this both in the application form and, if shortlisted, by interview.

Health

Candidates must be in a state of health such as would indicate a reasonable prospect of ability to render regular and efficient service.

Selection Process

The selection process may include the shortlisting of candidates on the basis of the application form and will include an interview.

Shortlisting

A shortlisting process will involve an expert panel that will select candidates for interview who, based on an examination of the application form and assessed against the essential requirements and personal attributes required, appear to be the most suitable for the position.

Interview

Candidates who are shortlisted will be called for interview by an expert panel. The interview will focus on how the candidate meets the essential requirements and personal attributes of the post and their career and experience to date.

Note: Candidates will be notified of interview dates and arrangements at the earliest opportunity. The onus will be on candidates to make themselves available for interview as advised.

Deeming of candidature to be withdrawn

Candidates who do not attend for interview as required or who do not, when requested, furnish such evidence, as the Department requires in regard to any matter relevant to their candidature, will have no further claim to consideration.

Candidate Feedback

Feedback will be provided on written request.

Review Procedures in relation to the Selection Process

Requests for a review are dealt with in accordance with the codes of practice published by the published by the Commission for Public Service Appointments. The Codes can be accessed at www.cpsa-online.ie.

Confidentiality

Please note that all personal data shall be treated as confidential in accordance with the Data Protection Acts, 1988 and 2003.

Candidates should note canvassing will disqualify.