



# Careers for Postgraduate Physics Students

Dr. Alexis Nolan-Webster

Career Consultant

[AlexisNW@Liverpool.ac.uk](mailto:AlexisNW@Liverpool.ac.uk)



Careers and Employability and Ability





**Research**

**Academia**

**Industry**

*“A postgraduate degree in itself isn’t an indicator of a high calibre candidate or one who has leadership potential”*

- National Centre for Universities and Business, 2010



Along with any other candidate, you have to provide an employer with **evidence of your suitability and potential**. Whether a job needs a postgraduate degree or not, what is likely to set you apart is the ability to demonstrate an increase in personal capability, and enhanced skills developed during your postgraduate research experience.



# Physics Data 2018

## Graduate Outcomes

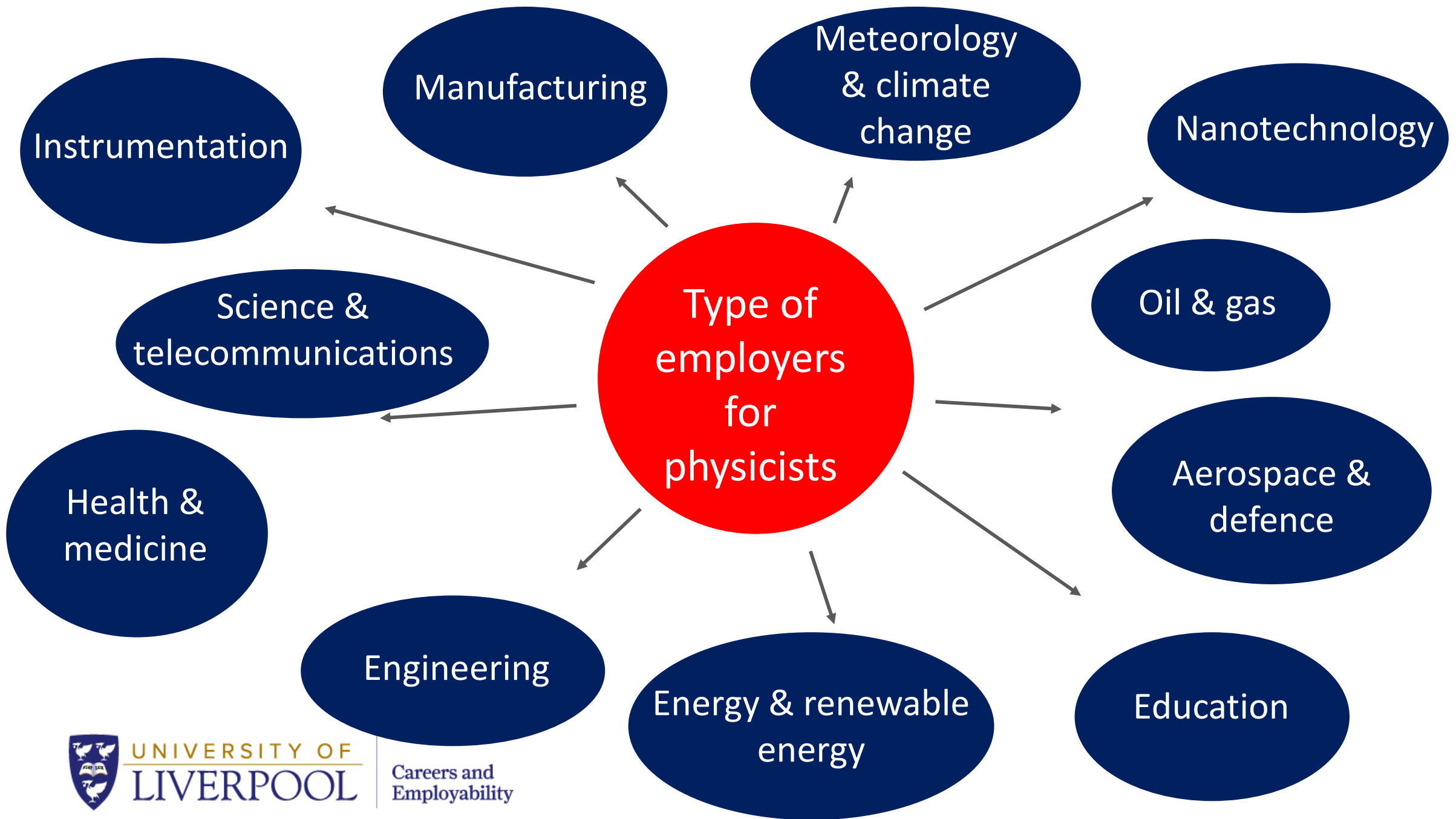
- Biggest UK annual social survey
- Taken 15 months after graduating
- Helps current and future graduates gain an insight into career destinations
- We don't expect every path to be straightforward!



# Top 10 Professional Jobs (National)



Programmers and software development professionals	21.8%
IT business analysts, architects and system designers	7.4%
Secondary education teaching professionals	6.3%
Business and related associate professionals	6.1%
Information technology and telecommunications	5.0%
Engineering professionals	4.4%
Physicists	4.3%
Finance and investment analysts and advisers	4.1%
Chartered and certified accountants	3.0%
Management consultants and business analysts	2.4%





# University of Liverpool Destinations 2017-2018



# High Skilled Employment

Apply

High Skilled  
85.7%

Business Consultant /  
Business Development Manager /  
Data analyst / Data Consultant /  
Database Developer /  
Energy Contracts Graduate /  
graduate software engineer /  
Graduate test analyst / IT Assistant /  
Junior Data Analyst / Kick Start Intern /  
Newly Qualified Teacher of Science /  
Nuclear Physicist / Patent Assistant /  
Radiation physicist /  
Sales development executive /  
Software Developer / Software Engineer /  
SQL Developer / Teacher of science /  
Trainee Healthcare Scientist /  
Trainee Patent Attorney / Website Editor /

/ Ardent Credit / Bouygues (UK) Ltd /  
Broadway Partners / Calderstones School /  
Capita plc / Cloud Perspective / Eden Springs /  
Edmundson Electrical Ltd / English Martyrs School /  
First Derivatives plc / Kompl IQ / Kwalee Ld /  
Not Known / Platinum Civil Engineering /  
Royal Liverpool and Broadgreen University Hospitals  
Trust /  
Sky / Stantec / Symogen / UK Government /  
University of Liverpool / Vaultex / WP Thompson /



# Response Rate

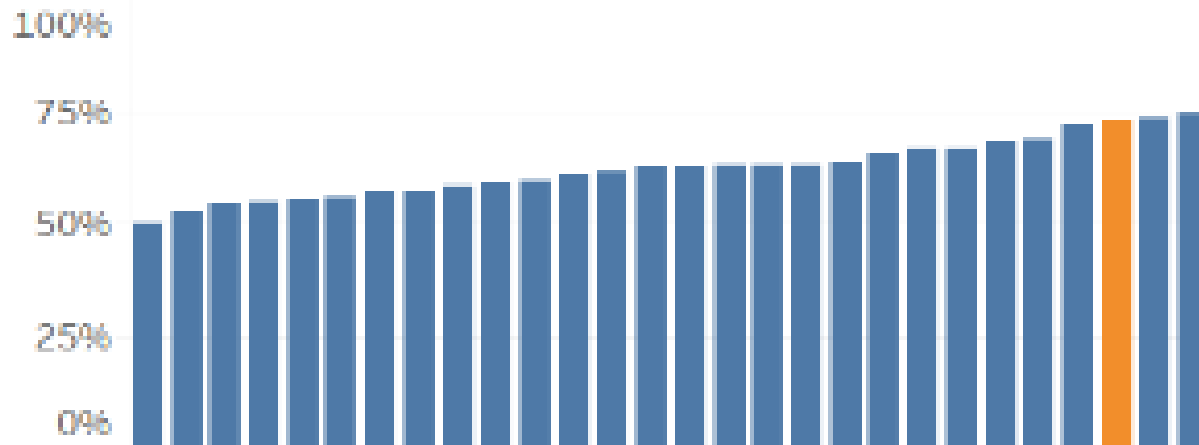


Response Rate (3 out of 28)

72.7%

Faculty Diff.  
+6.1% 👍

UoL Diff.  
+11.7% 👍



- The response rate for Physics graduates is good
- This places us high in comparison to similar universities in the Russell Group

# Average Salary

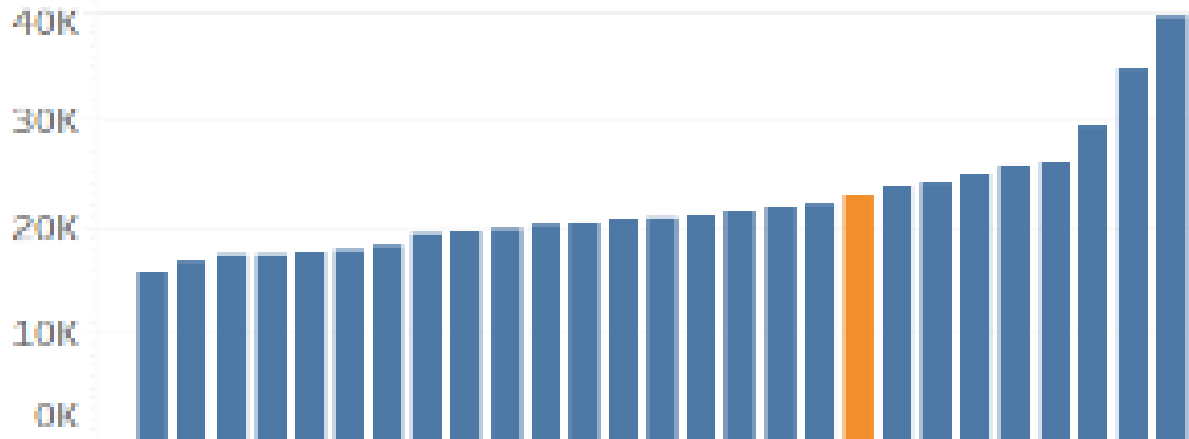


Average Salary (9 out of 28)

£22,823

Faculty Diff.  
£483 

UoL Diff.  
-£1,749 



- Average salary is good!
- Slightly lower than the University average
- Don't forget this is starting salary, once in a role you will progress

# Unemployment

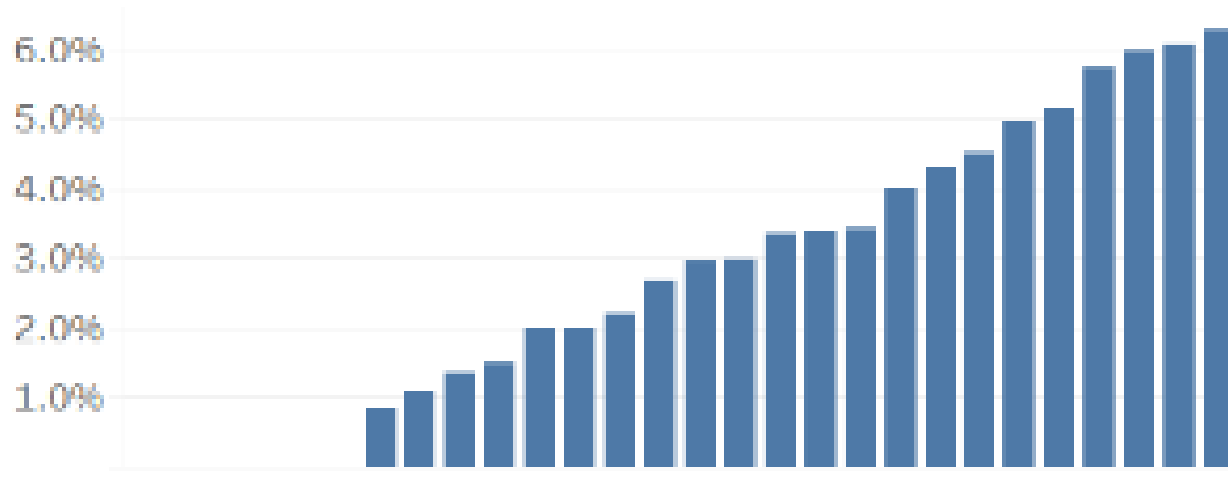


Unemployment % (1 out of 28)

0.0%

Faculty Diff.  
-3.5%

UoL Diff.  
-3.0%



- This is really positive – shows how employable you are as a Physics graduate

## Comparing demand, 2018 vs. 2022, Top Ten Skills

2018	Trending, 2022	Declining, 2022
<ul style="list-style-type: none"> <li>• Analytical thinking and innovation</li> <li>• Complex problem-solving</li> <li>• Critical thinking and analysis</li> <li>• Active learning and learning strategies</li> <li>• Creativity, originality and initiative</li> <li>• Attention to detail, trustworthiness</li> <li>• Emotional intelligence</li> <li>• Reasoning, problem-solving and ideation</li> <li>• Leadership and social influence</li> <li>• Coordination and time management</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical thinking and innovation</li> <li>• Active learning and learning strategies</li> <li>• Creativity, originality and initiative</li> <li>• Technology design and programming</li> <li>• Critical thinking and analysis</li> <li>• Complex problem-solving</li> <li>• Leadership and social influence</li> <li>• Emotional intelligence</li> <li>• Reasoning, problem-solving and ideation</li> <li>• Systems analysis and evaluation</li> </ul>	<ul style="list-style-type: none"> <li>• Manual dexterity, endurance and precision</li> <li>• Memory, verbal, auditory and spatial abilities</li> <li>• Management of financial, material resources</li> <li>• Technology installation and maintenance</li> <li>• Reading, writing, math and active listening</li> <li>• Management of personnel</li> <li>• Quality control and safety awareness</li> <li>• Coordination and time management</li> <li>• Visual, auditory and speech abilities</li> <li>• Technology use, monitoring and control</li> </ul>



# 2022 Skills Outlook

## Growing

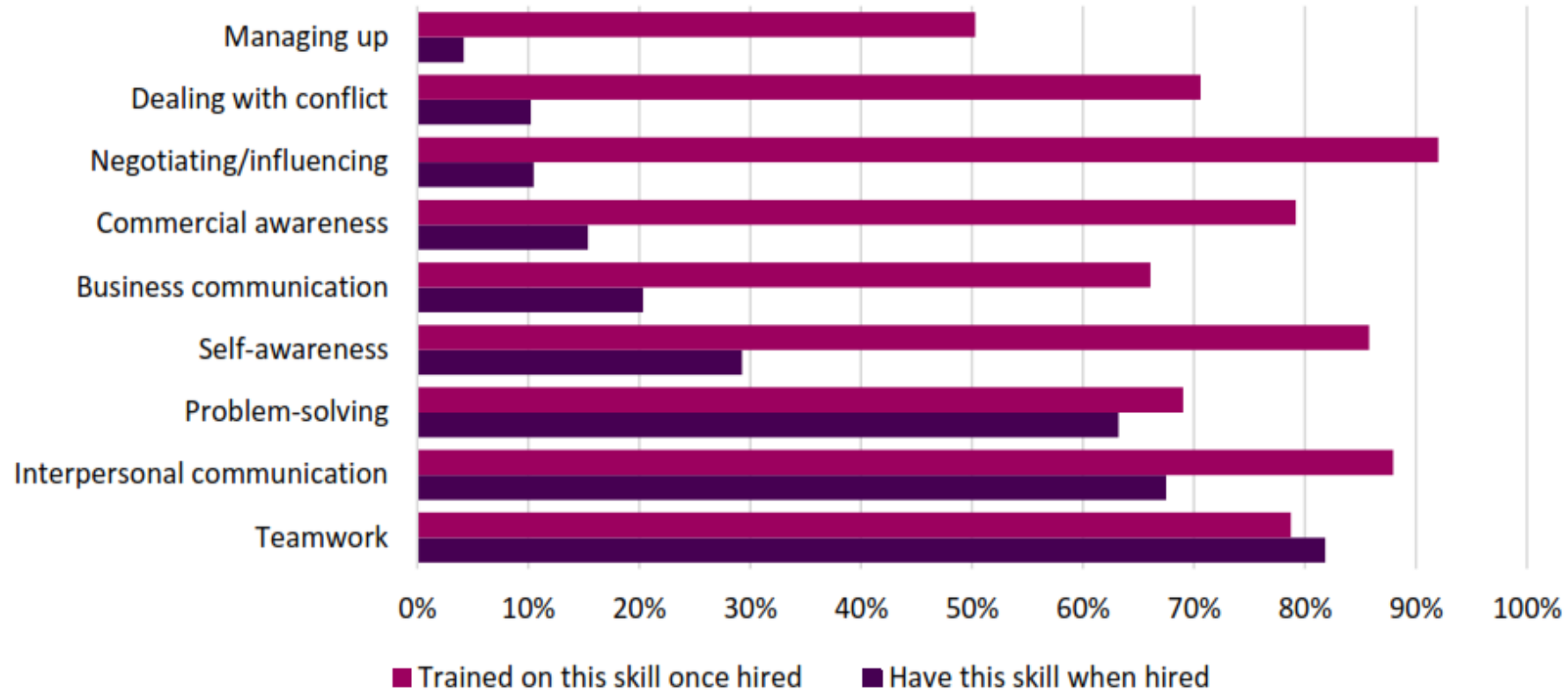
- 1 Analytical thinking and innovation
- 2 Active learning and learning strategies
- 3 Creativity, originality and initiative
- 4 Technology design and programming
- 5 Critical thinking and analysis
- 6 Complex problem-solving
- 7 Leadership and social influence
- 8 Emotional intelligence
- 9 Reasoning, problem-solving and ideation
- 10 Systems analysis and evaluation

## Declining

- 1 Manual dexterity, endurance and precision
- 2 Memory, verbal, auditory and spatial abilities
- 3 Management of financial, material resources
- 4 Technology installation and maintenance
- 5 Reading, writing, math and active listening
- 6 Management of personnel
- 7 Quality control and safety awareness
- 8 Coordination and time management
- 9 Visual, auditory and speech abilities
- 10 Technology use, monitoring and control

Source: Future of Jobs Report 2018, World Economic Forum

# The Real Skills Employers Want

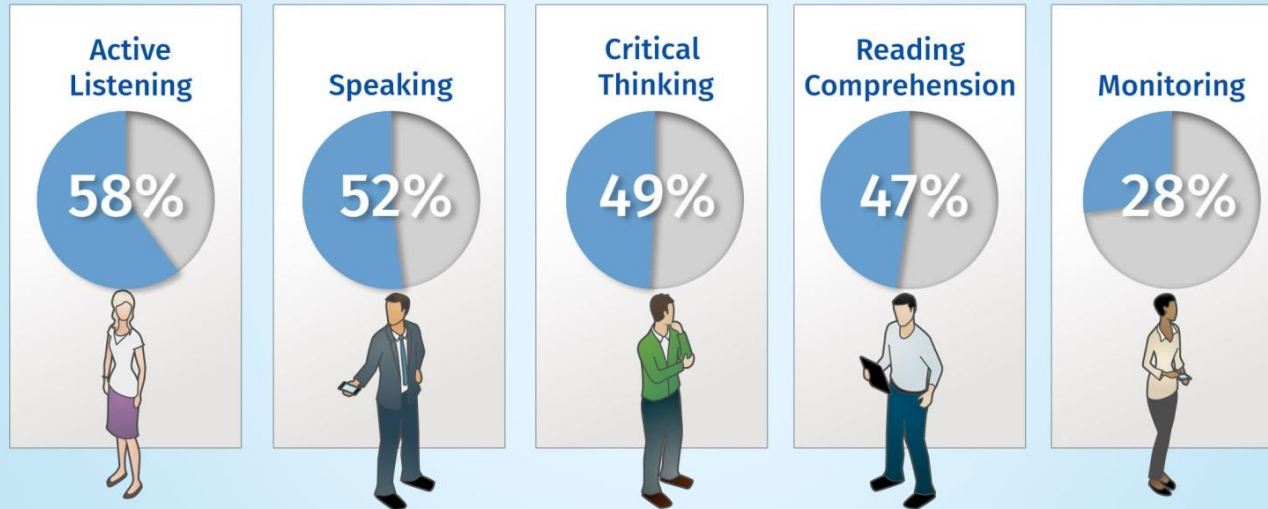


177 employers with 17,527 graduates in 2015  
Source: AGR Development Survey 2016.

# Are soft skills really that soft?

## Top 5 Skills for Tomorrow's Jobs

Projected percentage of job openings that rate these skills "very important" (2019-2022)



Source: Employment and Social Development Canada, RBC Economics Research

Skills mobility will be essential in a future economy where jobs rise and fall with each new technology wave.

*“Employers focus above all on the attitudes and aptitudes that will enable employees to be effective in the workplace. This is by far the most widely cited consideration among graduate recruiters and for more than half it ranks as the single most important factor” CBI, 2017*

# Here's proof they matter...

To succeed in this role, you should have the following skills and experience



- Minimum 2:1 degree in a commercially related degree (Bachelors or Masters)
- You will have long term career ambitions for leadership roles in sales, marketing or operations
- You will have first class communication, planning and organizational skills
- You must also have a full and valid UK driving license.
- You will demonstrate a high level of energy, drive and passion in pursuing work objectives and a total commitment to achieving successful outcomes.
- You will be adaptable and socially confident, enabling you to build strong relationships quickly, which will be key to your success. In essence, you will already be naturally demonstrating our behaviors of Eager to win, Take Ownership and Team up to Excel. This will be evidenced by your academic and extra curricular activities.

## Person Specification

We are looking for people who bring something special to the firm and who also have some distinctive qualities. We want driven people who think creatively about their work, embrace challenges and can resolve complex problems.

- Demonstrates strong analytical and research skills
- Takes ownership of assigned tasks and adopts a pro-active approach
- Ability to organise and prioritise workload
- Produces accurate and timely work
- Participates in meetings, providing information and ideas with clarity and persuasiveness
- Ability to build relationships
- Respects differences in people and values diversity of ideas
- Applies active listening skills – asks questions when necessary but makes basic assumptions when appropriate
- Actively seeks to enhance own expertise and knowledge
- Demonstrates drive and commitment to self-development
- Professional approach to work and clients i.e. professional appearance, respect for individuals, and ethical conduct



## Requirements

- Bachelor or Master's degree or the equivalent in professional experience and extraordinary talent for sales.
- Experience in Sales, Customer Service or Retail is a plus.
- Strong communication skills and customer focused.
- Strong sense of team mentality and reliability.
- Ability to work on weekends and at events.
- Positive, enthusiastic and passionate about the changes in the personal transportation industry.
- Fluency in English is required.
- Ability to understand and convey business issues and technical concepts.
- Valid driver's license in the country in which you are applying, 2 year minimum driving record required with a clean driving history.

## Requirements

- ABB or higher at A Level (or equivalent) including either Maths or IT
- A 2:1 or higher in a computer related degree
- A passion for computing and new technologies & competent knowledge of general computing
- Be a natural problem solver
- Excellent communication skills – verbal and written, with the ability to liaise internally and externally with contacts at all levels
- The ability to work within strict deadlines and under pressure
- The ability to think broadly and have an aptitude to learn quickly



## Entry requirements:

- Educated to degree level
- Demonstrable interest in usability
- Excellent communication and interpersonal skills
- A proactive problem solver
- Keen eye for detail
- Proven ability to work under pressure within a fast-paced environment
- Geographic flexibility throughout the UK





Think about what else you have been doing in addition to your PhD as you will have developed skills through a wide range of experiences.

Non-academic employers in particular will be interested in skills gained from a variety of activities.



## Positions of Responsibility and Leadership

Administration and Teaching/Demonstrating Responsibilities

PhD Research

Industry Placements

Voluntary work

Competitions

Conferences

Committees and Societies

Training Courses

Sport

Employment

# How to find a job? - Networking



- Did you know that 70%+ of jobs are never advertised?
- LinkedIn, Academia
- Connect with others in your field
- Ask Advice
- Follow interest groups
- Promote your research, conferences, publications
- Jobs advertised

# How to find a job?

## Industry



- Careerjet - <https://www.careerjet.co.uk/search/jobs?s=physics+phd&l=>
- ECM High Tech Recruitment (Cambridge) - <http://www.ecmselection.co.uk/>
- Gradcracker - <https://www.gradcracker.com/search/sciences-maths/physics-graduate-jobs>
- Indeed - <https://uk.indeed.com/Astrophysics-jobs>
- LinkedIn - <https://www.linkedin.com/jobs/astrophysics-jobs/?originalSubdomain=uk>
- Quant - <https://www.quantaccountants.co.uk/sector/contractors-freelancers/> (Page for PhDs)
- ResearchGate - <https://www.researchgate.net/scientific-recruitment>
- Simply Hired - <https://www.simplyhired.co.uk/>
- Total Jobs - <https://www.totaljobs.com/jobs/jobs-for-phd-graduates>

## Graduate Schemes

Same as recruitment for all graduates. PhDs who enter either graduate schemes or graduate jobs may progress much more quickly than other graduates.

Many big name recruiters only have one professional entry point for those without experience. This includes some major consultancies such as Accenture, the UK Civil Service Fast Stream, the NHS Scientific Training Programme and more.

## Resources

Article on PhDs working outside Academia <https://www.findaphd.com/advice/doing/phd-non-academic-careers.aspx>

Prospects <https://www.prospects.ac.uk/postgraduate-study/phd-study/your-phd-what-next>

Vitae <https://www.vitae.ac.uk/researcher-careers>





# How to find a Postdoc?

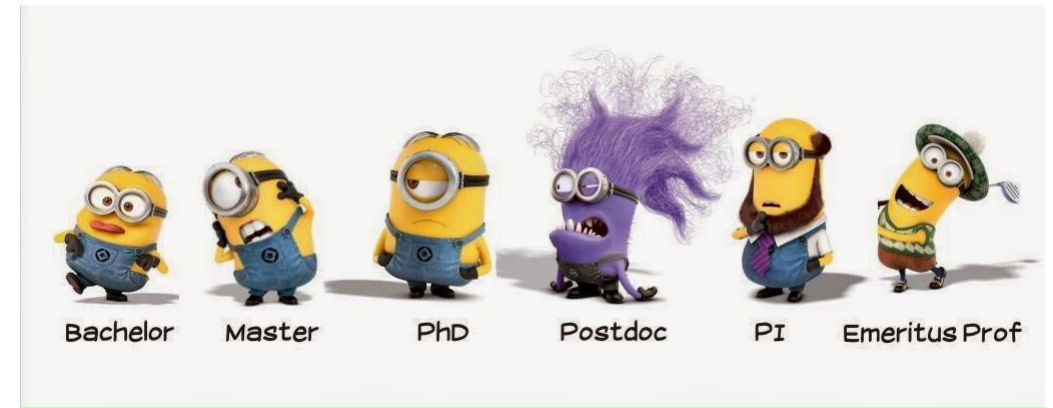
Your supervisors contacts

Networking

University Websites

Webpages:

- <https://www.findapostdoc.com/>
- <https://www.jobs.ac.uk/>
- <https://www.researchgate.net/scientific-recruitment/jobs>



# Applying for Jobs or Postdocs



- Different CVs – Industry and Academia
- Industry – 2 pages
- Academia – much longer 6-8 sides, detailed
- Use STAR throughout. Situation, Task, Action and Result
- Apply for roles in plenty of time, don't leave it to last minute
- Ask for help with your CVs and any cover letters. Get feedback and someone else to check

# When thinking about life after PhD

- **Do your research.** Identify skills that really matter to employers
- **Self assess.** Skills Audit. Identify gaps. Vitae Researcher Development Framework (RDF).
- **Gain experience.** Industry placements, voluntary work, part time jobs, teaching and admin responsibilities, committees, societies, training courses, hobbies etc. Gain evidence for the skills required
- **What** you do is key, there can be flexibility around where
- **Maximise your PhD research.** Continue to develop the specific technical and research skills required for your future
- **Prepare** fully ahead of interviews and when making application
- **Develop the right mind-set.** A positive attitude goes everywhere with you



# Keep Going!

