

Cloud Computing

Welcome **(Module Administrivia)**

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Who is this module for?

- Software Developers (Programmers)
- ~~Hardware Engineers~~
- ~~System Administrators~~
- ~~IT Managers~~
- ~~IT Salesmen~~
- ~~General Users~~

What is this module about?

- Software Applications in the Cloud
 - Frontend: Programming for *one* machine
 - Web/mobile apps
 - Not very different from traditional programming
 - You should have learned the techniques before or will learn from other modules such as IWT and MCIT
 - Backend: Programming for *many* machines
 - Data-intensive information processing
 - Big-data (“Web-scale”) problems
 - MapReduce... and beyond



This module

How is it related to Big Data?

- Big Data Analytics is the killer application of Cloud Computing
- Cloud Computing is the infrastructure for Big Data Analytics

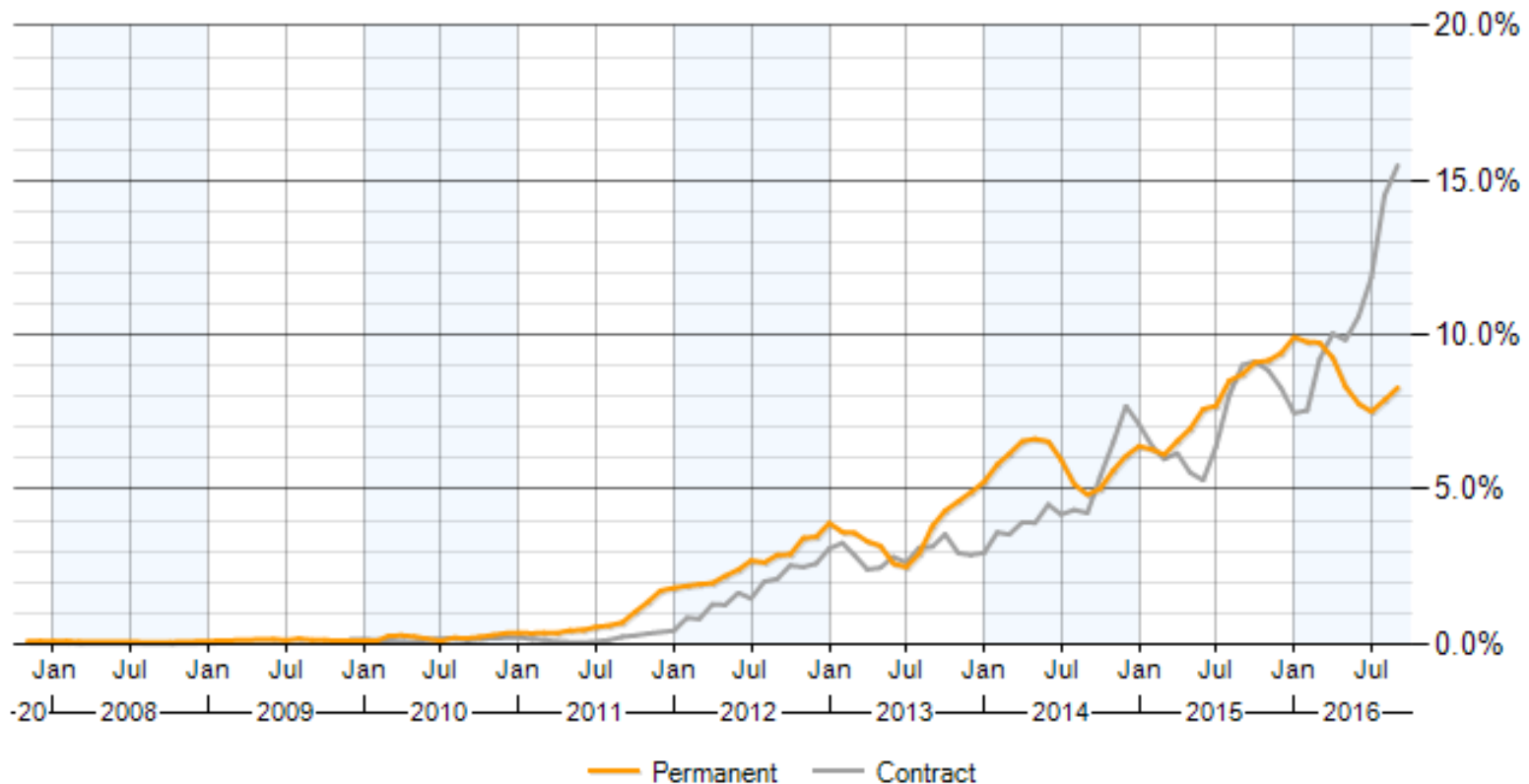
What is MapReduce?

- Programming model for expressing distributed computations at a massive scale
- Execution framework for organising and performing such computations
- Open-source implementation called **Hadoop**



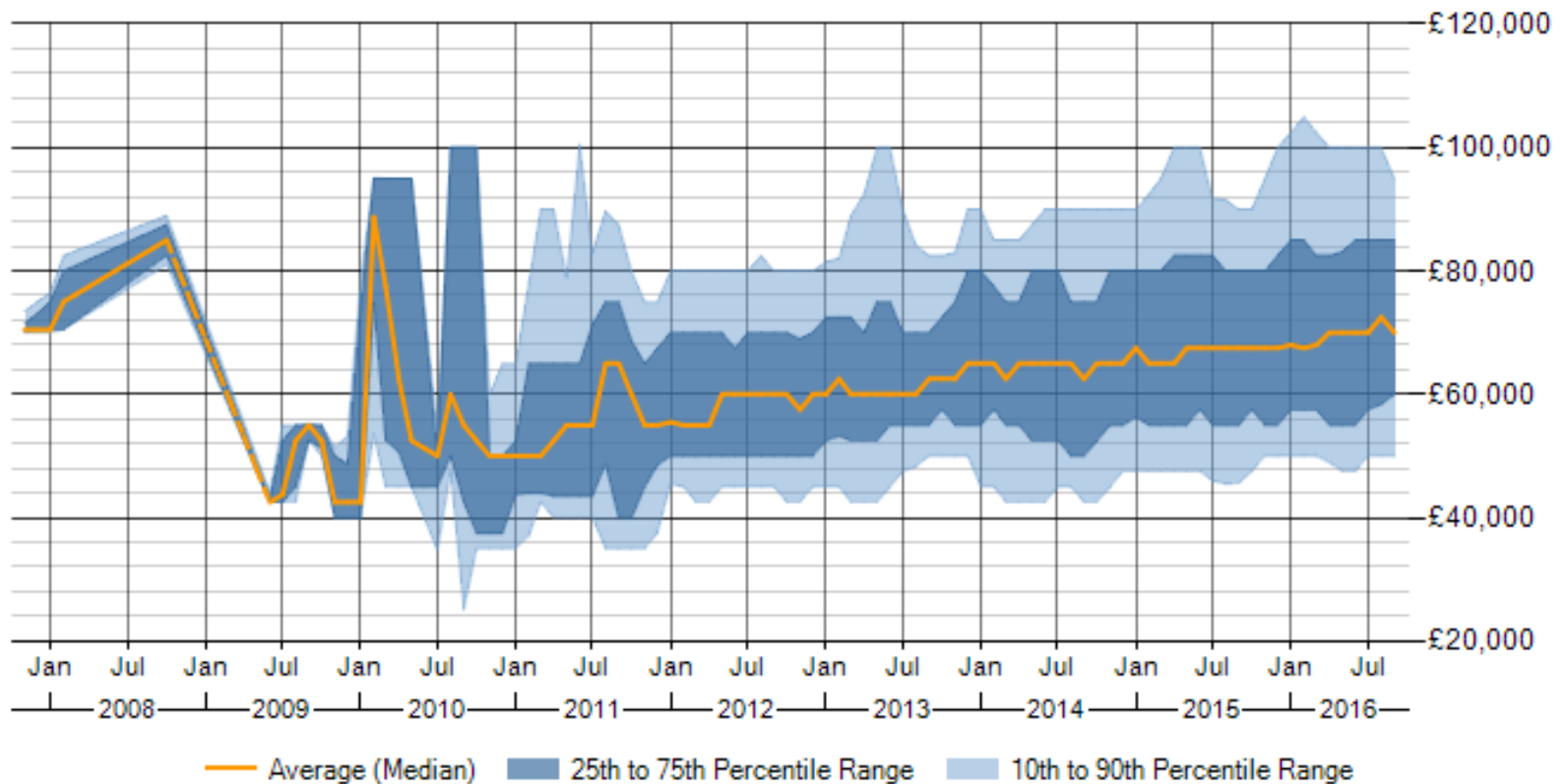
On the job market

- [Hadoop Jobs in London](#)



On the job market

- [Hadoop Jobs in London](#)



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Pre-requisites

- Good knowledge of objected-oriented programming in *Python*
 - BSc: SP2; MSc: POP1
 - Experience with the Unix environment is helpful
 - But this module is *not just* about programming: we'll expect you to pick up Hadoop (quickly) along the way
 - Focus on “thinking at scale” and algorithm design

Pre-requisites

- No prior knowledge required in
 - Parallel/Distributed systems

This module is not for you ...

- If you're not genuinely interested in the topic
- If you can't put in the time
- If you're not ready to do a lot of work
- If you're not open to thinking about computing in new ways
- If you can't cope with the uncertainty and unpredictability etc. that comes with bleeding edge software

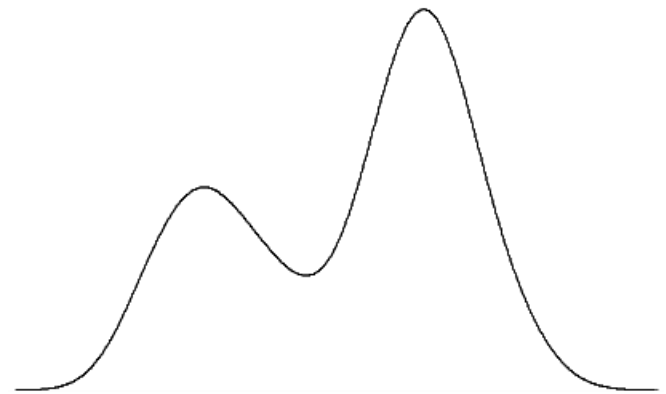
Attendance

- Date and Time: Friday Evenings
 - Session I 6:00pm – 7:15pm
 - Session II 7:30pm – 8:45pm
- Birkbeck eRegisters
 - <http://www.bbk.ac.uk/eregisters/eregisters>



Assessment

- Coursework (20%)
 - BSc: One essay of 2,000–3,000 words
 - MSc: Two programming assignments
- Examination (80%)



NB:

*There is no resit coursework/examination in the summer.
If you fail, you will have to retake or resit in the next year.*

Resources

- ~~Hadoop on your local machine~~
 - ~~Linux: native installation~~
 - ~~Windows/Mac: in a virtual machine (e.g., VirtualBox)~~
 - ~~Hortonworks Sandbox~~
- Hadoop in the cloud
 - [AWS Educate](#): Birkbeck is a *member institution*

Students

AWS Credits (annually renewable)

- AWS Account: \$100 in credits at member institutions; \$40 in credits at non-member institutions
- AWS Educate Starter Account: \$75 in credits at member institutions; \$30 in credits at non-member institutions

AWS Training

- Access to AWS Technical Essentials Training Course (a \$600 value)
- Free access to labs



Curated Content

- Free access to AWS content for homework, labs, or self-study

Collaboration Tools

- Student Portal access
- Virtual and in-person event to gather information, share best practices, and network
- Provide feedback on AWS Educate

AWS Account

- Should I apply for a standard AWS account or an AWS Educate Starter Account?
 - Selecting an AWS account allows for the greatest amount of flexibility, access to AWS services, eligibility for AWS Free Tier in year one, post-graduation portability, and a larger AWS credit amount through the AWS Educate program.
 - The AWS Educate Starter Account is a great alternative only if you do **not** have access to a *credit card*.



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Stay Tuned

- For more details from the module page (and also in Moodle) ...

Teaching Assistant



[Cosmin Stamate](#)

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