Engineering Doctorate (EngD) in Computer Science

School of Computer Science, University of St Andrews in partnership with The Data Lab

https://engd.cs.st-andrews.ac.uk/
What is an EngD?
EngD overview

- 4-year graduate research programme leading to the qualification of Engineering Doctorate (EngD), established for over 20 years, internationally recognised as equivalent to a PhD.

- Our first intake will be Sep 2016, with initial funding: 5 studentships at 50% from The Data Lab https://engd.cs.st-andrews.ac.uk/

- Research Training Component (RTC):
  8 MSc modules (2 Semesters, ~32 weeks).

- Individual Research Component (IRC):
  5-6 Individual Research Projects (IRPs) (~170 weeks)
  IRPs take place in an industry setting.
The Data Lab

• The School is excited to be partnering with The Data Lab — http://www.thedatalab.com/

• The Data Lab will sponsor five Data Lab Prize Studentships for 2016/17 at 50% of costs with fees at UK/EU rate.

• Awarded to those REs and Industry Sponsors wishing to undertake data-driven and/or data-intensive research.

• Anyone can apply for these studentships, but Industry Sponsor must have a base or operations in Scotland.
Research Engineers (REs)

• Students on the EngD are referred to as Research Engineers (REs).

• REs will have an Industry Sponsor:
  
  • Will be the owner of the problem domain(s) for the IRPs that constitute the IRC.
  
  • Will provide an Industrial Supervisor for the RE.
Supervision

• All REs will have two supervisors:
  
  • An **Industrial Supervisor** (provided by the Industry Sponsor).
  
  • An **Academic Supervisor** (from the School).
  
• The two Supervisors **collaborate** for the benefit of the RE:
  
• A lot of scope of flexibility in the nature and scope of the relationship, to suit the RE and industry sponsor.
Research Training Component (RTC)

- The RTC is a taught component (~32 weeks, i.e. two Semesters).
- 8 MSc modules from our existing MSc courses.
- Options for REs:
  - All 8 modules in Y1 (traditional EngD model).
  - 4 modules in Y1 then 4 modules in Y2.
  - (Depending on an applicant’s background, there may be exemptions from the requirement for 8 modules, and a RE would be able to enter in Y2 of the programme.)
Individual Research Component (IRC)

• This is the bulk of the EngD (~170 weeks).

• 5-6 Individual Research Projects (IRPs):
  • Each must make a contribution to knowledge.
  • ~25-30 weeks per IRP.

• IRPs documented and collated into a portfolio dissertation (not the same as PhD by portfolio) for a final viva voce examination:
  • a traditional monograph dissertation submission is also possible (collection of IRPs more compatible with industry).
**RTC and IRC options**

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<tr>
<th>Months</th>
<th>Activity</th>
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<tbody>
<tr>
<td>01-12</td>
<td>RTC and background reading</td>
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<tr>
<td>13-44</td>
<td>IRC</td>
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<tr>
<td>45-47</td>
<td>Final write-up</td>
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<td>48</td>
<td>Submission and <em>viva voce</em> examination</td>
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<tr>
<th>Months</th>
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<tr>
<td>01-06</td>
<td>RTC Semester 1 background reading</td>
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<td>07-16</td>
<td>IRC</td>
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<tr>
<td>17-20</td>
<td>RTC Semester 2</td>
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<td>21-44</td>
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Why an EngD?
Benefits to Industry [1]

- Human capital and skills development: organisations and individuals

- New knowledge: short-, mid- and long-term application potential.

- Innovation: potential for patents and commercialisation.

- Knowledge networks: link with other organisations as well as academia.
Benefits to Industry [2]

• Partnership with The Data Lab: resources, links, expertise, studentships.

• Scope and flexibility for research: not restricted to a single topic area.

• Context-sensitive admission: some exemptions may be possible for entry into year 2.

• Non-traditional entry routes: consider background and experience of applicant.

• Flexibility in engagement for taught component: spread over first 2 years.
Experience

• Previous experience is positive.

• EngDs remain popular.

• REs and Industry Sponsors gain technical and non-technical benefits.

• Looking forward: link with industry for Computer Science expertise becoming increasingly vital in the Age of Data!