Introduction to MSc AI Group Projects
2019–2020

Robert Craven
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Motivation

The Group Project is compulsory for all MSc in AI, and counts the same as one of your taught modules.

Skills gained:

• producing software as part of a team;
• applying and extending theory and skills from taught modules;
• learning new programming languages, technologies, etc.;
• dealing with deadlines and project management;
• delivering software that fulfils a contract.

Students have said that our group projects have been highly relevant to their subsequent careers.
Industrial/external partners

Some projects offered are with people from outside DoC. (This should be clear from the proposal.)

These projects still have a lead supervisor from DoC.

In practice, the involvement of the external agent varies.

They can be an excellent opportunity to get experience developing code in an industrial or commercial setting.

You are not required to do your group projects with external partners.
Schedule

This term:

- register groups by Monday 18th November, 1pm;
- select project preferences by Monday 25th November, 1pm;
- meeting with supervisor (and industrial partner, if applicable) as soon as projects allocated.

Spring term:

- submit 2 intermediate reports (deadlines will be on CATe).

Summer term:

- submit final report and code archive by Wednesday 13th May, 1pm (3rd week);
- project presentations, Monday 18th–Thursday 21st May (4th week).
Forming and registering groups (1)

Form your own groups:

- five groups, 5 or 6 members each.

Each group must elect a leader who will:

- log into the Project portal;
- create a new group, and add group members.

Other group members:

- log into the Project portal;
- sign up to the group and confirm.
Forming and registering groups (2)
Welcome to your new Project Portal.

Please use menu at the top (or alternatively below) to navigate through the Portal.
If you have any questions, contact System Administrators or Project Coordinators.
Forming and registering groups (4)
## Forming and registering groups (5)

**Current groups:**

**Group 2**

<table>
<thead>
<tr>
<th>Username</th>
<th>Date signed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexey Zakharov (az519)</td>
<td>25/10/2019</td>
</tr>
<tr>
<td>Cemlyn Waters (cnw119)</td>
<td>Waiting to be signed</td>
</tr>
<tr>
<td>Faidon Miltzalis (fm1710)</td>
<td>Waiting to be signed</td>
</tr>
<tr>
<td>Charles Metz (cpm19)</td>
<td>Waiting to be signed</td>
</tr>
<tr>
<td>Dhruba Gowda Storz (dg1119)</td>
<td>Waiting to be signed</td>
</tr>
</tbody>
</table>

Select...  

[Add to group]  

[Remove group]
Forming and registering groups (6)

Current groups:

| Group 2 |
|------------------|------------------|
| **Username**     | **Date signed**  |
| Alexey Zakharov (az519) [leader] | 25/10/2019 |
| Cemlyn Waters (cnw119) | Sign |
| Faidon Mitzalis (fm1710) | Waiting to be signed |
| Charles Metz (cpm19) | Waiting to be signed |
| Dhruba Gowda Storz (dg1119) | Waiting to be signed |

Select... Add to group
Proposals will be on the Project portal:

- check back regularly!

Groups choose and rank 5 projects:

- rankings entered by group leader;
- rankings are taken into account during allocation;
- allocation is not on a first-come first-served basis;
- every group must rank 5 projects;
- rank a maximum of 2 projects proposed by the same supervisor;
- you can check how popular projects are.

In choosing, remember that you will be developing a piece of software.
Welcome to your new Project Portal.

Please use menu at the top (or alternatively below) to navigate through the Portal. If you have any questions, contact System Administrators or Project Coordinators.
# Project allocation (3)

## Active Project Proposals

<table>
<thead>
<tr>
<th>No</th>
<th>Proposer</th>
<th>Title</th>
<th>Date updated</th>
<th>No places available</th>
<th>Select</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Alansary, Amir</td>
<td>Federated Learning: Model Poisoning Attacks in Healthcare [1: 0, 2: 0, 3: 0, 4: 0, 5: 0, SNR: 0, ALLOC: 0]</td>
<td>2019-10-18</td>
<td>1</td>
<td>Select</td>
</tr>
<tr>
<td>2</td>
<td>Alansary, Amir</td>
<td>Deep Learning on Brain Surfaces [1: 1, 2: 0, 3: 0, 4: 0, 5: 0, SNR: 0, ALLOC: 0]</td>
<td>2019-10-18, 3 days ago</td>
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<td>1</td>
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<tr>
<td>4</td>
<td>Alansary, Amir</td>
<td>AutoML: Differentiable Architecture Search (DARTS) for Healthcare [1: 0, 2: 0, 3: 0, 4: 0, 5: 0, SNR: 0, ALLOC: 0]</td>
<td>2019-10-21</td>
<td>1</td>
<td>Select</td>
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<tr>
<td>5</td>
<td>Bolardinelli, Francesco</td>
<td>The Verification of Multi-agent Hybrid Systems [1: 0, 2: 0, 3: 0, 4: 0, 5: 1, SNR: 0, ALLOC: 0]</td>
<td>2019-09-20</td>
<td>1</td>
<td>Select</td>
</tr>
<tr>
<td>6</td>
<td>Craven, Robert</td>
<td>Computational Art Forgery [1: 0, 2: 0, 3: 0, 4: 0, 5: 0, SNR: 0, ALLOC: 0]</td>
<td>today</td>
<td>2</td>
<td>Select</td>
</tr>
<tr>
<td>7</td>
<td>Craven, Robert</td>
<td>The Next World Financial Crash, through Reinforcement Learning and Flexible Ethics [1: 0, 2: 1, 3: 0, 4: 0, 5: 0, SNR: 0, ALLOC: 0]</td>
<td>today</td>
<td>4</td>
<td>Select</td>
</tr>
<tr>
<td>8</td>
<td>Craven, Robert</td>
<td>Make Logic Fun [1: 0, 2: 0, 3: 0, 4: 0, 5: 0, SNR: 1, ALLOC: 0]</td>
<td>today</td>
<td>3</td>
<td>Select</td>
</tr>
<tr>
<td>9</td>
<td>Craven, Robert</td>
<td>Modelling of BREXIT debates using argumentation theory [1: 0, 2: 0, 3: 1, 4: 0, 5: 0, SNR: 0, ALLOC: 0]</td>
<td>today</td>
<td>5</td>
<td>Select</td>
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<tr>
<td>10</td>
<td>Craven, Robert</td>
<td>Reverse-Engineering Alan Turing's Mind using GANs [1: 0, 2: 0, 3: 0, 4: 0, 5: 0, SNR: 1, ALLOC: 0]</td>
<td>today</td>
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<td>11</td>
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<tr>
<td>12</td>
<td>Kainz, Bernhard</td>
<td>Neurological status assessment of unborn babies with ultrasound and deep learning [1: 0, 2: 0, 3: 0, 4: 0, 5: 0, SNR: 0, ALLOC: 0]</td>
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<td>13</td>
<td>Kainz, Bernhard</td>
<td>Tackling Crohn's disease using deep learning [1: 0, 2: 0, 3: 0, 4: 0, 5: 0, SNR: 0, ALLOC: 0]</td>
<td>2019-09-30</td>
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<td>14</td>
<td>Kainz, Bernhard</td>
<td>Reading Sonographer’s mind: Analysis of probe motion in freehand ultrasound scanning [1: 0, 2: 0, 3: 0, 4: 0, 5: 0, SNR: 0, ALLOC: 0]</td>
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### The Next World Financial Crash, through Reinforcement Learning and Flexible Ethics

**Proposer**
Craven, Robert

**Date updated**
2019-10-25

**Description**
Make a tool in C++, and implementing Reinforcement Learning, which can be set free in the FINTECH wilds and cause catastrophic socio-economic meltdown in three months.

**Requirements**
Hubris.

**Possible meeting times**
Contact the supervisor directly.

**Number of places**
4
### Project allocation (5)

#### My selected projects

<table>
<thead>
<tr>
<th>Choice number</th>
<th>Proposer</th>
<th>Supervisor</th>
<th>Title</th>
<th>Mark choice 1</th>
<th>Mark choice 2</th>
<th>Mark choice 3</th>
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#### Filter active proposals

**Title**

Search by title

**Proposer**

Search by proposer

**Description**

Search by description

Add a tag

**External only**

- [ ]

#### Active Project Proposals

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### Project allocation (6)

**Selection deadline**

Selection deadline for this project is: November 25, 2019

### Final Allocations

<table>
<thead>
<tr>
<th>No</th>
<th>Student</th>
<th>Student's rank</th>
<th>Proposer</th>
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<tr>
<td></td>
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<td></td>
<td></td>
<td>There are currently no active allocations.</td>
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### My ranked selections (choose 5)

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Project allocation (7)

Selection deadline

Selection deadline for this project is: November 25, 2019

Final Allocations

No | Student | Student's rank | Proposer | Supervisor | Title | Course
---|---------|----------------|----------|------------|-------|-------
There are currently no active allocations.

My ranked selections (choose 5)

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Filter active proposals

Title
Project assessment

Assessed as part of Software Engineering Practice and Group Project (CO545).

First report (15%):

• project specification and development strategy (3–5 pages).

Second report (15%):

• progress and testing strategy (3–5 pages; plus appendix).

Final report and presentation including demonstration (70%):

• can use material from first two reports;
• around 25 pages plus appendix;
• includes evaluation and project logs;
• 20 min presentation with an additional 5 min for questions.
Group organisation

Elect a group leader:

• makes executive decisions;
• ensures on-time delivery;
• usually in charge of integration.

Choose a documentation editor:

• records minutes and decisions of meetings;
• compiles the logbook and documentation.

Everyone should contribute to coding:

• keep a record of your time and activity for the log.
Associated lectures

Lectures for by Dr Oana Cocarascu in the first half of Spring Term:

- version control strategies;
- estimating and planning;
- agile software development methods (Scrum, eXtreme programming, etc.);
- continuous integration and continuous delivery;
- project management.

See CO545 module outline for more.
Some requirements

You must:

• typeset your reports in \LaTeX{} (templates will be provided; here’s an introduction);

• test your code comprehensively (and evaluate the coverage of your test suite, including the evaluation in the report);

• use a version control system (the commit logs must be included in report);

• use agile development techniques.
Final Remarks

Read the MSc AI Group Projects web page carefully.
Start early and leave enough time to write your reports.