CIS4055-Computing Master Project

Week 1 Lecture

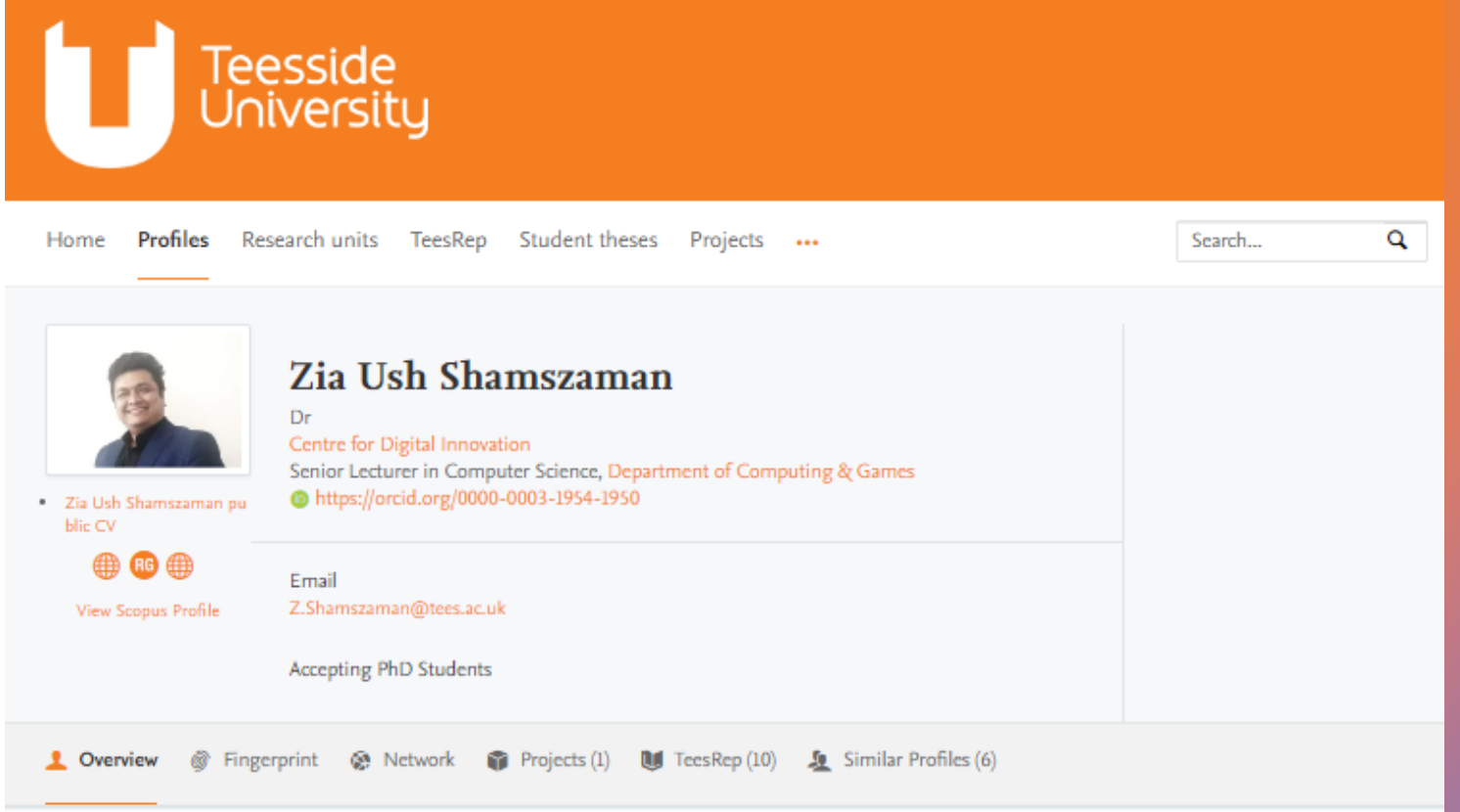
Module Introduction

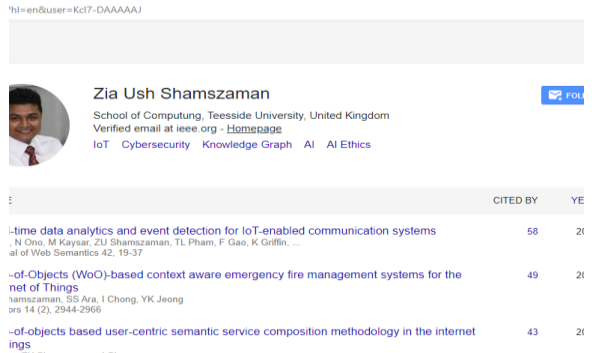
Outline

- Module introduction
- Research
- Timetable and Blackboard Ultra
- What type of project you can do
- Your supervisor

Meet the team

- **Dr. Zia Ush Shamszaman (Module leader)**
  - Research
    - Cybersecurity, IoT and Computer Networks
    - Artificial intelligence, Trustworthy AI, Explainable AI (XAI)
    - Semantic Web, Linked Data, Knowledge graph
  - Experiences
    - 7+ years in industry
    - 12+ years in academia & research
  - Email: z.shamszaman@tees.ac.uk
  - Office: Europa Building IT1.32b





Meet the team (Supervisors)

Supervisor / 2nd Reader	Email
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The Module

- 60 credits (Triple Module) – 600 learning hours
- 40 hours per week over the project period
- It is your project and you should be able to demonstrate clear ownership and management of the project

Assessment

- Product or Artefact (40%) 10th January – 2024
- Report or Paper (50%) 10th January – 2024
- Presentation + Artefact Demonstration + VIVA (10%) Starts from 17th January – 2024 (1week)

Assessment

- Product or Artefact (40%)
  - Deliverable relates to the specific field of study, demonstrates some originality and is robust in its development
  - Addresses the research question, hypothesis using appropriate techniques
  - Demonstrates a significant solution to the specialised area of research or practice under investigation
  - Produce high quality output that demonstrates a comprehensive understanding of techniques and some originality in the application of knowledge.

Assessment

- Documentation - Technical Report or Paper (50%)
  - Identify a research question and hypothesis that identifies a challenge specific to their field of study and provide a sound justification based on the evidence identified.
  - Investigate previous work (literature review and/or market research) and apply an appropriate methodological approach to address the identified problem.
  - Apply data analysis techniques, interpret findings and be able to make reasoned arguments for decisions made.
  - Critically evaluate of the product/artefact, using third party evaluation where appropriate, recognising the strengths and limitations of the work.
  - Communicate work professionally in the required academic format/style including discussion of legal, ethical and professional issues.

Assessment

- Presentation + Demonstration + VIVA (10%)
  - Defend the rationale and decisions made in the process and development of the artefact or product
  - Effectively communicate and present complex and specialised concepts in the chosen domain in a constructive and reflective manner
  - Make sure you maintain the time limitation for each section
    - 10 min for presentation
    - 10 min for artefact demonstration
    - 5 min for Q/A

Project proposal

- Use the template provided in BB
- Submit via BB by 4 pm on 13th **October 2024** (no marks for this, but it is essential)
- Includes some discussion on ethical Issues
  - But think very carefully if your project is going to include children or vulnerable adults – there maybe a lot of Ethical “hurdles” to overcome that makes your project unviable in the time you’ve got to complete it

Ethical Review

VERY IMPORTANT

- If not done you can't pass the project
- Read the guidance on BBU
- Be very careful if you want to do a project involving children or vulnerable adults – will need a higher level of ethical clearance, or guide them in a slightly different direction
- More on this in my next lecture

https://apply-ethics.tees.ac.uk/

Where to find out key information?

- Your main source of information is the Computing Masters Project module on Blackboard Ultra
- I would advise that you look at:
  - Schedule (so you are aware of the key dates)
  - Project Handbook/Project Guide (contains a lot of detail and advice about tackling your masters project)
  - Learning materials – there are lots of help available here

Your Supervisor

- Supervisor's role is to guide you through the project process not to do the project for you!
- You can also approach other members of staff about answers to technical issues
- At M level you should take more responsibility for your work than at UG level
- It is most important that the work looks like M level work and isn't just a variant on an UG FYP (we've had comments on this in the past)
- You are encouraged to explore a research question (see project handbook and here)
- Make sure you turn up on time to your meetings

Meeting with your supervisor

- You will be supervised in a small group with other students (2 hours/week will appear on your time-table)
  - You supervisor may also use this time to schedule individual meetings with you
  - Your supervisor will be taking some holiday during this period but there will always be someone in the school to talk to if you have issues
- Each supervisor may run their meetings in a different way – they may want group meetings initially as students often have similar issues.
- Your supervisor will almost certainly be taking some holiday

Other contact

- For module specific information and queries
  - Zia Ush Shamszaman (z.shamszaman@tees.ac.uk)
- Queries about your project and short extension
  - Your supervisor
- Student issues (e.g. long extensions, suspend studies)
  - Course Leader
- Other more serious issues
  - PL Programmes – Vicky Rushin-Chape (v.rushin-chape@tees.ac.uk)

Other available support

- There is lots of support available to you to help you in preparing for your assessments and other academic work. Please make sure that you access the support you need sooner rather than later. Below are links to some of the support available:
- English Language Support - please use this service if you are an international student and know you have some issues with your English.
- Referencing - there is online material you can work through as well as workshops you can go along to help you with your referencing skills.
- Academic writing - again there is online material you can work through and workshops to attend.
- Other academic help available - includes:
  - Journals: What? Why? Where?
  - Strategies for reading academic articles (Bitesize)
  - Report Writing

Timetables

- Timetabling is handled centrally
  - Module supervisors and module leader have no control over lecture times, tutorial times or which students are allocated to which group.

- Questions about your timetable, lecture times, grouping, etc. should be sent to studentlife@tees.ac.uk

Blackboard Ultra

- Module information and resources
  - Module guide
  - Module specification
- Learning Materials
  - Link for joining lecture online (if you need)
  - Lecture materials
- Assessment
  - Report
  - Artefact
  - Presentation slides

Research

“Systematic investigation towards increasing the sum of knowledge.”

-Chambers 20th Century Dictionary

“an endeavour to discover new or collate old facts etc. by the scientific study of a subject or by a course of critical investigation.”

-The concise Oxford Dictionary

Research

Re → Again or over again

Search → Find

Process → Step-by-step

What type of project?

- Your project can take one of the 2 approaches
    - **Technical Report + Product or Artefact**
    - **Research Paper + Product or Artefact**

- **Research paper** - research article presented in the form of a journal/conference paper and is likely to explore a specific area of research in your area of study
- **Technical Report** – documents the design, development, implementation and evaluation phases of a project (this should be embedded in the context & research of the area of study)

What type of project?

Both types of projects involve the production of: •

- **Significant technical solution to a computing problem specific to the field of study OR**
- **Results of a technical experiment, evaluation of a piece of software or novel programming technique application of knowledge and techniques for developing systems e.g.,**
  - Critique of a development or project management methodology and proposals for changes (based on experiment/evaluation/commercial risk evaluation)
  - Application of cybersecurity measures to a specific scenario or business sector
  - Guidance to SME to implement a specific technology into their business based on research & evaluation
  - Cybersecurity techniques to ensure compliance, network configurations of a huge network etc.
  - Extensive data analytics on commercial, science, health or engineering data etc.
  - AI/DL/ML techniques to solve a specific problem or proposing a new algorithm
  - Proposing a framework with a prototype implementation
  - IoT based solution with implementation

Getting your project idea

- Use the project idea you developed for the ‘Research Methods’ module
- Look at past examples on BBU- think about what you want to do after your MSc – can you do a project that will help you achieve your goal – PhD? Employment? Start-up?
- Talk to your supervisor
- Come-up with a Research Question that you want to explore. Sampl research questions
- What problem would your artefact/product or application be trying to solve?
- Look in the area on BBU about getting a project idea

Getting your project idea

Make sure that your project is related to your area of study

Note: Do NOT take loads of time deciding – when your project starts the “clock is ticking!” It is not your supervisor’s job to come up with a project idea for you!

Look on BBU – there are some hints, tips and exercises for you.

Final Outcome

An application or other artefact that an organisation or an individual can use to:

address a business or individual need, and/or • solve a business or individual problem, and/or

create a new approach that might help a business run more efficiently, and/or

suggest better ways of obtaining and/or displaying data to support an organisation, etc.

A report or academic research paper/article that both discusses the research you have done in order to develop your product/artefact as well as documenting how you developed your product/artefact and evaluated it (does it do what it is supposed to do?).

A viva where you will present using slides and a demonstrate your product/artefact and answer questions from your supervisor and 2nd reader about your project.

Conclusion

- Please take some time to read the Module guide/Project handbook – this should answer many questions you might have
- Look at the support suggested in this lecture
- Keep your eye on your timetable for the sessions with your supervisor
- Remember each supervisor will run these sessions slightly differently, just make sure you know how to join their session and how to contact them

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Thank you

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