

# Research Internship Application Form

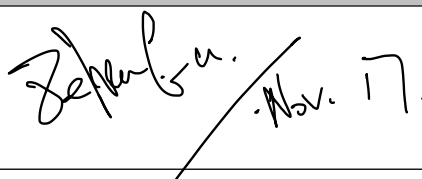
*Graduate School of Natural Sciences*

Please fill in this form and send it via email to [coordinator-ai-master@uu.nl](mailto:coordinator-ai-master@uu.nl).

| Student   |  |
|---|--|
| <b>Name of MSc programme</b>  | Artificial Intelligence  |
| <b>First and last name of student</b>   | Zehao Lu   |
| <b>Email address</b>  | com3dian@outlook.com   |
| <b>Student number</b>   | 2736888  |
| Project supervisor  |  |
| <b>Name and title (must be a Utrecht University staff member)</b>                 | Shihan.Wang, Assistant Professor   |
| <b>Faculty, department and Research group (chair)</b>                             | Science<br>Information and computing sciences<br>Intelligent Software Systems<br>Intelligent Systems |
| <b>Email address</b>  | s.wang2@uu.nl  |
| Daily supervisor  |  |
| Fill out this section only if the project supervisor is not the daily supervisor! |  |
| <b>Name and title</b>   | NA   |
| <b>Affiliation</b>  | NA   |
| <b>Address</b>  | NA   |
| <b>Telephone number</b>   | NA   |
| <b>Email address</b>  | NA   |
| Research internship   |  |
| <b>Title</b>  | Community Detection and Opinion Leader Mining via Graph Representation Learning                      |
| <b>Location</b>   | On campus  |

|   |  |
|---|--|
| <b>Course code</b>  | INFOMRIAI (7.5 EC)   |
| <b>Number of credits</b>  | 7.5  |
| <b>Project starting date</b>  | 18/11/2021   |
| <b>Ending date</b>  | 14/01/2022   |
| <b>Short description of the project, including aims</b>   | <p>Graph representation learning involves projecting nodes and edges of a given graph or network into an n-dimensional vector space in which neighbouring nodes are placed in close proximity. This representation allows discovering hidden relationships/edges as well as communities (cluster of nodes) among others. With the ongoing Corona pandemic, people share their opinions on social media platforms. We have gathered a large collection of tweets (from Twitter) that have Coronavirus tags since February 2020. These data can be modelled as a network/graph (homogeneous or heterogeneous) which in turn is used as an input to an embedding model in order to derive interesting relations, users as well as communities.</p> <p>In this research project, we plan to integrate the graph representation learning method, with our algorithm to improve the learning efficiency. The goal of this project includes:</p> <ol style="list-style-type: none"> <li>1. to model the Coronavirus tweet data as a graph</li> <li>2. to use representation learning to find relationships between Twitter users, tweets, etc</li> <li>3. to identify users playing an essential role in the discussion of topics such as mask-wearing, lock-down, etc</li> </ol> |
| <b>Agreements between student and supervisors</b>   |  |
| <b>Number of hours available for supervision</b>  | 4 hours  |
| <b>Planning/timing of the supervision (e.g. 'weekly meetings')</b>  | Weekly meetings, teams chats.  |
| <b>Agreed student work load (e.g. full time, 4 days/week, etc.)</b>   | 3 days/week  |
| <b>Other activities agreed upon</b>   |  |
| <b>Copyright</b>  |  |
| By signing this document, the student declares to transfer the copyright of any and all products, including the tangible and intellectual products, of the research project to Utrecht University, if |  |

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**Signatures****Student signature and date**Handwritten signature and date: *Sept. 17.***Project supervisor + examiner  
signature and date**