

## **Teaching Assistant of Deep Machine Learning for Biotech Data Analysis in Computer Engineering and Electrical Engineering, Ghent University, Belgium.**

**Title :**Teaching Assistant – Deep Machine Learning for Biotech Data Analysis (Korea)

**Employer:**Ghent University

**Job location:** 119 Songdomunhwa-ro, Yeonsu-gu, 21985 Incheon

**Published :**May 3, 2019

**Application deadline :**June 16, 2019

**Job types :**PhD

**Fields :**Informatics, Computing in Mathematics,Computer Engineering, Applied Mathematics, Electrical Engineering and 2 more.

### **JOB DESCRIPTION**

**Last application date:** Jun 16, 2019 14:47

**Employment category:** Other

**Contract:** Limited duration

**Degree:** Master degree in one of the following disciplines: computer science/engineering, informatics, electrical engineering, applied mathematics, biomedical engineering, bioinformatics, or a related field

**Occupancy rate:** 100%

**Vacancy Type:** Autonomous academic staff

Ghent University Global Campus

Ghent University is a world of its own. Employing more than 15,000 people and having more than 44,000 students, it is actively involved in education and research, management and administration, and technical and social services on a daily basis. It is one of the largest and most exciting employers in Belgium, offering great career opportunities. With each of its 11 faculties and more than 100 departments implementing state-of-the-art study programmes that are grounded in research in a wide range of academic fields, Ghent University is a logical choice for its employees, as well as its students.

Ghent University opened the Ghent University Global Campus (GUGC) in 2014, making it the first European university to be part of the Incheon Global Campus (IGC) in Incheon, South Korea. GUGC offers Bachelor of Science programmes in Molecular Biotechnology, Environmental Technology, and Food Technology, currently having an enrollment of about 450 students. Furthermore, GUGC has plant biotechnology, biomedical research, biotech data science, food technology, and environmental technology as its main research areas. Please visit the home page of Ghent University ([ugent.be/en](http://ugent.be/en)) and Ghent University Global Campus ([ghent.ac.kr](http://ghent.ac.kr)) to learn more about our organizations.

Center for Biotech Data Science

At GUGC, the Center for Biotech Data Science develops new mathematical and computational approaches for extracting knowledge from vast sets of biotech data, including omics data, medical images, and clinical patient records. Furthermore, the Center for Biotech Data Science, which has a headcount of four professors and ten Ph.D. students, is responsible for organizing nine courses, for a total of 65 ECTS, ranging from Informatics to Bioinformatics and Probability & Statistics.

Internet Technology and Data Science Lab (IDLab)

IDLab is a core research group of imec with research activities embedded in Ghent University and the University of Antwerp. IDLab performs fundamental and applied research on internet technology and data science, and is, with over 300 researchers, one of the larger research groups at imec. The research areas of IDLab cover machine learning and data mining, semantic intelligence, and cloud and big data infrastructures (a/o). Graduates of IDLab are currently working at Google DeepMind and Google Brain.

### **Job Summary**

Full-Time Ph.D. Position (Teaching Assistant) – Ghent University Global Campus

**Department:** Department of Environmental Technology, Food Technology and Molecular Biotechnology (KR01)

**Department:** Department of Electronics and Information Systems (TW06)

**Degree:** Master degree in one of the following disciplines: computer science/engineering, informatics, electrical engineering, applied mathematics, biomedical engineering, bioinformatics, or a related field

**Contract:** A 1-year contract, may be renewed twice (once for three years and once for two years), on condition that the previous term was given a positive evaluation

**Occupancy rate:** 100%

**Vacancy type:** Assistant Academic Personnel (AAP)

**Salary:** A minimum salary of 30 million KRW before taxes, with the exact amount depending on experience (this salary already includes a year-end premium and a holiday allowance)

Last application date: June 16, 2019 or until the vacancy is filled (applicants are encouraged to apply immediately as the position will be filled upon finding the right candidate)

Starting date: August 26, 2019 (negotiable)

Job Position

Ghent University Global Campus, South Korea, has a vacancy for a Ph.D. position (Teaching Assistant) in the area of biotech data science, starting from August 26, 2019 (negotiable). It concerns a temporary full-time AAP position for a renewable period of maximum 6 years. As Ghent University Global Campus maintains an equal opportunities and diversity policy, everyone is encouraged to apply for this position. The candidate will work under the supervision of Prof. Wesley De Neve and Prof. Arnout Van Messem at the Center for Biotech Data Science of the Ghent University Global campus in Korea. However, the candidate will also be assigned a co-supervisor at the home campus in Ghent, Belgium. In addition, the candidate will be able to spend time at the home campus in Ghent during his/her Ph.D. studies. For non-Korean applicants, free student accommodation (single housing unit) and a yearly travel budget are foreseen.

Apart from helping out with teaching, the candidate is expected to perform research on the topic of (deep) machine learning, targeting applications in the domain of biological sequence analysis (e.g., structural and functional genome annotation, protein structure prediction), thus requiring some interest in: (1) molecular biology and (2) interaction with industrial and academic domain experts.

The targeted doctoral degree is the degree of Doctor in Computer Science Engineering, as awarded by the Faculty of Engineering and Architecture of Ghent University in Belgium. More information about this degree can be found here: [ugent.be/ea/en/for-phd-candidates-and-students](http://ugent.be/ea/en/for-phd-candidates-and-students).

Note that candidates with a non-Belgian Master's degree will have to undergo a diploma assessment, requiring the identification of a set of courses from the entire educational curriculum of the candidate that is equivalent to at least 18 ECTS credits of general courses and/or courses related to the main subject (master dissertation not included) of a Belgian Master of Science Degree in Engineering Technology.

### **Job Description**

About 50% of your assignment will be spent on assisting your supervisors in teaching undergraduate courses at Ghent University Global Campus, Korea (informatics, bioinformatics, statistics, and/or mathematics). These teaching activities typically include the supervision of (computer-based) hands-on sessions, the authoring of new course materials, the grading of assignments and exam questions, and the supervision of yearly bachelor's projects and occasional student internships.

Conduct applied research in the area of (interpretable) machine learning, focusing on applications in the domain of biological sequence analysis (e.g., structural and functional genome annotation, protein structure prediction), possibly in collaboration with industrial partners (e.g., BASF) and academic partners. The candidate will be able to start from already existing data processing tools (see for instance SpliceRover and TISRover, two gene structure predictors online available at the following URL: [bioit2.irc.ugent.be/rover](http://bioit2.irc.ugent.be/rover)).

Present research results at internal and external events (promotional events, Ph.D. seminars, major national and international conferences) and publish research results in peer-reviewed international journals (e.g., Bioinformatics).

Assist your supervisors with tasks in ongoing and future R&D projects that are relevant to your doctoral research topic, as well as with the writing of project proposals and grants.

Profile of the candidate

You hold, by September 2019, an MSc degree in one of the following disciplines: computer science/engineering, informatics, electrical engineering, applied mathematics, biomedical engineering, or bioinformatics. Related disciplines may be considered as well.

You have an excellent academic track record.

You have good programming skills in languages such as C++, Python, and/or R.

You have strong analytical skills to interpret the obtained experimental results.

You have an independent research and strong self-learning ability; a creative and inquisitive attitude is a must.

You show an expressed interest in tutoring students and supervising exercise classes, also for relatively large groups (about 50 students per group).

You have an excellent command of English (a minimum score of 80 on the TOEFL iBT test), both written and orally.

You are comfortable with working in an international and multi-cultural environment that is dynamic in nature (Ghent University Global Campus for instance counts more than 20 nationalities among its Ph.D. students).

Experience with a deep learning framework (e.g., PyTorch, TensorFlow, Keras) is a plus.

Experience with a high-performance UNIX-based cluster environment is a plus.

Some awareness of (molecular) biology and/or computational genomics is a plus. Note that you need to have at least 3 years of relevant work experience in case you do not have an MSc degree from a Korean university. This is a visa requirement of the Korean government for non-Korean Ph.D. students.

How to apply

Required Documents

Personal motivation letter

Full professional/academic resume (CV)

Your resume needs to include the contact details of at least 2 references

Your resume needs to document at least 3 years of relevant work experience in case you do not have an MSc degree from a Korean university (visa requirement of the Korean government for non-Korean Ph.D. students)

Transcripts of your study results

Copy of your BSc and MSc degrees

A PDF version of your master's thesis Application Process and Interview

All required documents, which must be merged into a single PDF file, have to be sent in English to Prof. Wesley De Neve ([wesley.deneve@ghent.ac.kr](mailto:wesley.deneve@ghent.ac.kr)), with subject "Application: PhD in machine learning and biotech data analysis". The candidate will receive a confirmation e-mail upon the successful receipt of the application.

After a first screening, selected candidates will be invited for an interview (possibly via Skype) as a first contact in a multi-stage selection process.

Candidates will be asked to tackle a programming assignment in Python

For any inquiries regarding this vacancy, please send an email to Prof. Wesley De Neve ([wesley.deneve@ghent.ac.kr](mailto:wesley.deneve@ghent.ac.kr)).