GHENT UNIVERSITY

FACULTY OF LAW AND CRIMINOLOGY

PHD FELLOWSHIP IN NETWORK/COMPUTATIONAL CRIMINOLOGY

SUMMARY

Job title	PhD Fellow in Network Criminology
Apply before	31 August 2022 23:59 (Brussels time)
Faculty	Law and Criminology (https://www.ugent.be/re/en)
Department	Criminology, Criminal Law and Social Law (https://www.ugent.be/re/cssr/en)
Research group	Institute for International Research on Criminal Policy (https://ircp.ugent.be/)
Occupancy rate	100%
Type of employment	Contract of limited duration
Term of assignment	48 months (12 + 36 months)
Degree	MSc degree (e.g., statistical data analysis, statistics, computational physics, computer science engineering, criminology, applied economics, experimental psychology). Other disciplines and final-year students are encouraged to apply as well.
Vacancy type	Research staff
Link to online vacancy	**Click here**

JOB DESCRIPTION

Your tasks

We are recruiting one full-time PhD student with an interest in applying network theory and agent based modeling for the FWO research project "Interdependencies of Serial and Co-Offending Networks in Space and Time".

You will be expected to complete a PhD study on the topic of "Interdependencies of Serial and Co-Offending Networks in Space and Time". The main goal is to develop an understanding of how serial and co-offending behaviors are interdependent in space and time. To do so, you will apply network theory and agent based modeling on an integrated dataset of police recorded crime data and forensic biometric data. You will take primary responsibility for the scientific preparation, follow-up, implementation, and completion of this project. This includes the collection, processing, and analysis of police recorded crime data and forensic biometric data, as well as presenting intermediate results at international conferences and publishing findings in academic journals.

As a PhD student, you will be supervised by Prof. Christophe Vandeviver (Institute for International Research on Criminal Policy, Department of Criminology, Criminal Law and Social Law) and Prof. Luis Enrique Correa da Rocha (Complex Systems Institute, Department of Economics and Department of Physics and Astronomy). You will be based at the Department of Criminology, Criminal Law and Social Law, and will be also member of the Complex Systems Institute. Ultimately, this should allow you to complete an interdisciplinary PhD and obtain the combined degree of Doctor in Criminological Sciences and Doctor in Applied Economics.

Your key tasks as a PhD fellow are:

- To manage and carry through your research project;
- To collect and analyze data for the project;
- To write peer-reviewed articles in English and merge them into a PhD dissertation;
- To disseminate your research results by presenting intermediate results at scientific conferences and publish findings in academic journals;
- To participate in a PhD training program.

In addition, you will participate in the activities of Prof. Christophe Vandeviver's research team (see below, About Prof. Vandeviver and the research team). As part of your supporting the research team, you may occasionally be asked to support teaching activities and contribute to commissioned research.

English will be your main working language.

About the project

Serial offending and co-offending are two of the most prevalent offending behaviors in society. Evidence increasingly suggests that serial offending and co-offending are interdependent. However, extant research has generally studied both offending behaviors separately, misrepresenting the nature and extent of serial and co-offending and their potential interdependencies.

To resolve this, we leverage the recent availability of forensic biometric data to crime researchers. This allows us to uniquely distinguish offenders and link offences and co-offenders across space and time, without the need for offenders having been identified by the police. By integrating police data and forensic biometric data into a single robust crime dataset we are able to study the serial and co-offending behaviors of identified and unidentified offenders—which is not possible when only using police data.

Network theory offers a holistic perspective of offending behavior by representing serial offending and co-offending in a single dynamic network that evolves in space and time. Agent based modeling is a computational method that allows to simulate interactions between offenders and within offender groups via simple behavioral rules that are rooted in real-world observations obtained from our integrated dataset. Combining the outcomes from the network analysis and agent based modeling, we generate a quantitative behavioral framework on serial and co-offending behaviors.

In the project, you will closely collaborate with Prof. Christophe Vandeviver and Prof. Luis Enrique Correa da Rocha, as well as other scholars as appropriate. The project benefits from proximity to ongoing network criminology research supervised by Prof. Vandeviver and Prof. Rocha (see, e.g., here and here).

Conditions of employment

- We offer you a full-time PhD Fellowship (*Dehousse-bursaal*) of definite duration, consisting of an initial period of 12 months, which—upon positive evaluation—will be extended to a maximum of 48 months.
- Your contract will start on 1 November 2022 at the earliest and 1 January 2023 at the latest. The exact starting date will be determined by mutual agreement.
- Your remuneration will be determined by salary scale WM1 to WM4. Several elements, including prior experience and family situation, will be factored into the calculation of the salary offered. Click here for more information about our salary scales.
    - As a reference, the net amount of the scholarship will be approx. € 2,250.00 per month, supplemented with a holiday allowance and an end-of-year bonus. Click here for more information about cost of living in Belgium.
- On top of your salary, Ghent University also offers a number of social benefits, including 36 days of paid holiday leave (on an annual basis, for a full-time job) supplemented by annual fixed bridge days, hospitalization insurance, a wide range of training and education opportunities, access to university restaurants and university sports facilities. Click here for more information about our staff benefits.
- It is possible to make arrangements for remote work and flexible office hours.
- We strive to achieve a healthy work-life balance and nurture a healthy and rewarding work environment in which individual differences are welcomed and valued.

JOB PROFILE

In order to be eligible, applicants must:

- Hold a MSc degree (e.g., statistical data analysis, statistics, computational physics, computer science engineering, applied mathematics, criminology, applied economics, experimental psychology), or convincingly demonstrate that they will have this degree in hand by their preferred starting date (Note: other disciplines and final-year students are encouraged to apply as well);
- Be ready to relocate to Belgium as their main residence for the time of their contract;
- Be willing to spend (a) period(s) of time abroad as appropriate and to participate in international conferences;
- Be fluent in English as their primary working language, both passively and actively.

In addition, applicants are expected to demonstrate the following:

- Excellent academic writing and presentation skills;
- Experience in quantitative analysis and/or computational modeling;
- Experience in at least one advanced programming language (R, Python, C/C++, Matlab, etc.);
- An interest in issues related to crime and place;
- Ability to work both independently and as member of a multidisciplinary and international team.

Preference will be given to candidates who can demonstrate one or more of the following:

- Be fluent in Dutch and/or French (speaking and writing);
- Experience with publishing their research (Note: any publishing experience is valued, although experience with publishing in academic journals with peer review is preferred).

HOW TO APPLY

Application procedure

To apply, please send:

- A **cover letter** in English (single spaced, font Calibri 11, max. 2 pages) in which you address the following questions: Why do you wish to pursue a PhD in this area? How you propose to complete your main task? How does your expertise match the research? What is your prior experience (if applicable)?
- A detailed **CV**, including a list of your publications (if applicable);
- A **full transcript of your degrees and grades**
    - If you your diplomas are in a language other than Belgium's national languages (Dutch, French or German) or English, please add a translation in one of the afore-mentioned languages.

Applicants are asked to submit these documents as **one pdf** labeled "Application_FirstnameLastname_PhD2022" via email to christophe.vandeviver@ugent.be with the email subject line: "Application_FirstnameLastname_PhD2022".

The **deadline** for submission is **31 August 2022**. The expected **starting date** is **1 November 2022 at the earliest and 1 January 2023 at the latest**.

As Ghent University maintains an equal opportunities and diversity policy, everyone is encouraged to apply for this position.

Evaluation procedure

The submitted documents will be used to shortlist candidates. Shortlisted applicants will be invited for a (video conference) interview on 15 or 16 September 2022.

Prior to the interview, shortlisted applicants will be asked to complete a programming or computational task at home. The interview will consist of a presentation of the results of the programming task followed-up by a Q&A, and a selection interview. During the selection interview, the quality and relevance for this position of the academic and practical experience of the candidates will be assessed.

The selection process will be carried out by Prof. Christophe Vandeviver (selection chair), Prof. Luis Enrique Correa da Rocha, Dr. Laure De Cock, and/or Dr. Kural Arasan. They may invite additional colleagues as appropriate to aid in their assessment. Prior to the interview, a definite list of interview participants will be shared with the candidates.

Any candidate who may require special facilities should indicate this in their application, and we will try to accommodate their request.

We aim to notify all candidates of the results of the selection process no later than the end of September.

Institutional embedding

About Ghent University

Ghent University is a top 100 university. It is one of the major universities in Belgium and one of the largest universities in the Dutch language area. Our 11 faculties and more than 80 departments offer a broad spectrum of high-quality research-based educational programs and conduct in-depth research within a wide range of scientific domains. Several of our research groups, centers and institutes are renowned worldwide and you will find many eminent scientists among our alumni, including multiple Noble prize winners. Ghent university is known for its scientific expertise in life sciences and medicine, materials and agricultural science, veterinary medicine, psychology and history, and many more.

Ghent University occupies a specific position among the Flemish universities. We are a socially committed and pluralistic university that is open to all students and staff, regardless of their ideological, political, cultural or

social background. Our credo is 'Dare to Think', challenging everyone to question conventional views and to dare to take a nuanced point of view.

About the Faculty of Law and Criminology

The Faculty of Law and Criminology provides academic teaching and services based on innovative scientific research. The education within these programs is supported by the innovative scientific research performed within the 3 faculty departments encompassing all possible disciplines within the fields of law and criminological sciences. The Faculty is housed in the historic center of Ghent.

About the Institute for International Research on Criminal Policy

The Institute for International Research on Criminal Policy (IRCP) has a decades-long tradition of conducting high-quality independent scientific research. It provides advice to policy and practice and participates in societal debates. The Institute is integrated into the Department of Criminology, Criminal Law and Social Law of the Faculty of Law and Criminology at Ghent University and consists of 12 professors, 2 visiting professors, 10 post-doctoral researchers, and many pre-doctoral researchers and teaching assistants. The IRCP has grown out of a group of lawyers and criminologists, but now houses scientists with a very diverse scientific background and education.

About Prof. Vandeviver and the research team

Prof. Christophe Vandeviver is a Research Professor of Criminology at the Institute for International Research on Criminal Policy (IRCP), Ghent University, Belgium. He is an International Research Fellow at the Netherlands Institute for the Study of Crime and Law Enforcement (NSCR), and an elected Fellow and Co-President of the Young Academy of Belgium. Prof. Vandeviver holds a PhD and Master's degree in Criminology and a Master of Science degree in Quantitative Analysis in the Social Sciences.

Within the IRCP, Prof. Vandeviver supervises an international and multidisciplinary team of postdoctoral and pre-doctoral researchers, with backgrounds in a variety of disciplines, including criminology, geography, psychology, sexology, and law. The research of Prof. Vandeviver's team focuses on multiple themes, including spatial and temporal dimensions of crime and crime control, violence against police officers, and sexual violence victimization. The team members are passionate about applying cutting-edge technologies and quantitative methodologies in their research. The research of Christophe and his team is supported by multiple competitive grants awarded by e.g., Research Foundation Flanders, Ghent University Research Council, and Belgian Science Policy Office.

About the Complex Systems Institute

The Complex Systems Institute is an interdisciplinary research group for the study of critical events in complex social and economic systems (www.csi.ugent.be). The Complex Systems Institute brings together scholars from various areas with a joint interest in the dynamics of complex social and economic systems and find common concepts, methodology and interests to tackle complicated and usually interdisciplinary challenges together. The team consists of specialists in the study of dynamic networks and experts in the analysis of very large datasets interested in applying their expertise outside their own field, scholars in search of new methodology for reconceptualising their own field and reinterpreting the data to which they have access, e.g. stability of financial systems, systemic risk in interbanking networks, paradigm shifts in collaborative citation networks, emergence of epidemic outbreaks, and social networks.

More information

For informal inquiries, contact Prof. Christophe Vandeviver (christophe.vandeviver@ugent.be) and/or Prof. Luis Enrique Correa da Rocha (luis.rocha@ugent.be).

Should you wish to talk to one our current PhD students, you are welcome to contact Joke Geeraert (joke.geeraert@ugent.be).