Dear Members of the Selection Committee,

I am writing to apply for the Teaching Assistant (ref. 202506/RE23/PA/003) position in our department. As a postdoctoral researcher in **quantitative criminology** and an advanced **R user**, I am eager to strengthen students' **data-analysis skills**, guide them through **practical coding tasks**, and assist with the evaluation of their theses and oral defences.

Over the past three years in the Faculty of Law and Criminology, I have focused on **spatial analysis**, **data visualization**, and **crime-data modelling**. My daily use of **R** for **reproducible analysis** and publishing in **peer-reviewed publications**, including in *Quantitative Criminology*, has shaped my academic profile. Through teaching both **UGent master's students** and **undergraduates in India**, I have developed effective methods to **scaffold statistical concepts** and help students build confidence in quantitative analysis.

Many criminology students arrive with a limited quantitative background and often experience **statistical anxiety**. To address this, I designed [example exercises](#): that combine **scaffolding techniques**, **Bloom's Taxonomy**, and the **PRIMM cycle** (Predict → Run → Investigate → Modify → Make). Each lessons progress from worked examples to independent coding with specific tasks such as table(), group_by(), and summarise(). In each exercise, **contextual reminders** are provided (e.g., "Een correlatie van 0,7 tussen werkloosheid en misdaad betekent een sterk verband, maar nog geen causaal verband"), and **carefully constructed answer options** reflect and address typical student errors. Further details on these lessons are included in the supplementary document titled "*Instructional Design of the R Exercise Series*". All materials used to create the exercises is available in [GitHub repository](#).

In addition to traditional instruction, I have developed a set of **interactive swirl lessons** specifically for criminology students. These self-paced exercises feature **embedded hints**, **contextual guidance**, and a **structured learning progression**. To ensure students can work with realistic but privacy-safe datasets, I created **crimsyndata** using the synthpop package. This **synthetic dataset** mirrors crime patterns, enabling analyses such as burglary counts by district or simulated sentencing outcomes.

Recognizing that **clear reporting** is as important as analysis, I plan to use R to help students structure their findings effectively. Tools like **apaTables** and **flextable** allow results to be formatted in **APA style** directly from code, making reporting transparent and reproducible. I intend to teach students how to **interpret test statistics** and report their results according to **academic standards**, preparing them for thesis writing and publication.

My familiarity with **high-performance computing environments** and large-scale or **big data applications** means I can also support departmental projects involving **big data analysis**, **spatial modelling**, or **crime-pattern detection**. My experience with **geospatial and network-based data workflows** positions me to contribute flexibly to both teaching and research activities.

This position holds strategic importance for my own professional development as I transition from research into **applied data analysis** and, ultimately, **data science**. While I bring strong skills in R, this role offers the opportunity to expand my expertise with other tools—such as **Python, HTML, and Java**—that are required for developing Dodona exercises, and apply them in an educational context. The position aligns with my broader goal of working in **applied**

analytics and **educational design**, while supporting the **digital transformation** of criminology education.

Together with the Scientific Staff position (ref. 202506/RE23/AAP/002), which I have also applied for, these roles would create a powerful synergy between **content development and classroom implementation**. While the Scientific Staff role would allow me to design and develop the digital learning materials in Dodona, this Teaching Assistant position would enable me to reinforce that content through direct student guidance, assessment, and adaptation based on observed learning needs. This combined approach would ensure a coherent educational experience where online exercises and classroom instruction are perfectly aligned.

My understanding of **departmental workflows** – gained through teaching, internship supervision, and thesis evaluation – enables me to collaborate efficiently with course coordinators. With **NT2 A2 certification in Dutch** and ongoing **A3-level coursework**, I am also committed to creating accessible learning materials in Dutch for our students.

Thank you for considering my application. I look forward to the opportunity.

Sincerely,
Dr. Kuralarasan Kumar