Informatics

WE ARE HIRING!

Centre for Visual Analytics Science & Technology

PhD Candidate

Visual Analytics for Event-based Diffusion on Networks

We are hiring a talented PhD candidate in an international project on the visual analytics of complex diffusion processes over temporal networks. You will work in the context of SANE, a project held in cooperation with the University of Cologne (Germany) and the University of Newcastle (United Kingdom). This project arrangement gives you unique career opportunities, including student exchanges abroad, regular meetings with researchers from the other institutions participating to the project.

We are looking for a PhD candidate to work from the TU Wien, at the **Institute of Visual Computing and Human-Centered Technology**, in the Research Unit of Visual Analytics. We offer a position as project assistant (prae-doc) limited to 3 years for 30 hours/week (that can be extended to 40). Gross annual (monthly) salary of Euro 43,650 (2,464.80) according to FWF regulations.

In this position, you will begin your doctoral journey studying problems related to the topic of event-based network visualization. In Event-based (also known as "temporal") networks, the time coordinates where the nodes and the edges are "active" are an explicit element of the representation, differently from traditional timeslicing where a time structure is imposed over the input data. You will apply these concepts to the problem of Information Diffusion. Information Diffusion studies how "information" flows and spreads through an underlying network, and has been used to model, simulate, and predict natural and human-made phenomena in countless different domains (e.g., pathogen spread, malware outbreak in computer networks, viral marketing, etc.). However, little research has been done on this problem within the context of visualization.

In the context of this project, you will work on:
- Research activities on cutting edge research in the areas of visual analytics, temporal network visualization, and information diffusion;
- Methods and approaches for visualization in the information diffusion domain with the final objective of publishing and presenting your work at top level conferences and journals around the world;
- Challenges concerning implementing and optimizing algorithms on event-based networks as well as translating them onto realistic application scenarios to be evaluated under real-life conditions;
- Impact on visualization of your discoveries, and their impact on the community and how they integrate with existing theory.

What we expect from you:
- Completed master studies in computer science or equivalent university studies at home or abroad
- Interest and previous knowledge in the field of visual analytics and information visualization
- Excellent programming skills. Experience in visualization/user interfaces and/or graph algorithms are a plus.
- Curiosity, independent working style and problem solving skills
- Ambition for a PhD, writing papers, and travelling to international conferences and project partners to follow the evolution of the project.
- Excellent English communication and writing skills. Knowledge of German (at least level B2) or willingness to learn it in the first year are a plus (for non-native speakers).

We offer:

- Participation to an international project that connects three prestigious European and UK institutions: TU Wien, University of Cologne, Newcastle University.

- An international, vibrant and exciting working team, located in the heart of Europe.
- Hybrid working style with up to 60% home office option.
- A range of attractive social benefits (see Fringe-Benefit Catalogue of TU Wien).
- Wide range of internal and external training opportunities, various career options.
- Student exchanges and collaborations with other non-Austrian institutions in the project for personal and professional growth.
- Central location of workplace as well as good accessibility (U1/U4 Karlsplatz)

How to Apply and Deadline

To apply, please make sure you include the following:

- Motivation letter (statement of interest)
  Let us know how you plan to contribute to the vision of the project
- Curriculum Vitae
  Other than your achievements, tell us something about you, interests, hobbies, etc.
- Certificates of degrees and grades in courses taken so far
- A copy of the thesis of the highest obtained degree in PDF form

Send all these separately or in a ZIP file (a OneDrive/Dropbox/etc. link also suffices) by e-mail to **Alessio Arleo** (alessio.arleo@tuwien.ac.at) with the subject:

[SANE] PhD Candidate Application

You can ask informal questions about the application, the project, and selection procedure by writing an e-mail at the same address.

Deadline for Applications: December 8th 2023
Expected project start: January 2024